

CATALOGED

VOL. XXXIII

V. 33
JANUARY, 1923

No. 1

THE MONIST

SOME INTERPRETATIONS OF LIFE PHENOMENA AND THEIR PRACTICAL SIGNIFICANCE

THERE are probably few individuals who have lived to the age of understanding without asking at least themselves the questions: What is life? From whence does it come, and how does the living differ from the lifeless? These have been riddles of the centuries. The philosophers have pondered over them. The scientists have taken to their laboratories in an endeavor to wring from Nature an answer. From the very dawn of history we find that all mankind has concerned itself with these momentous questions, and today some will say that they are no nearer solved than when primitive man strolled from his cave, club in hand, to slay the living that by so doing he might live. Be this as it may, contrary to the belief of many, the search has yielded a harvest rich in deed. It is the history of this harvest and some of its fruits which we wish to examine briefly.

The race is like the child in that during the early stages of development the imagination is the predominating instinct. Hence, we find the first descriptions of the origin of life highly imaginative.

The Greeks looked on the Goddess Gea as the mother of mankind. In their glorious mythology they picture men and women as springing into life from the stones cast on her. The Celts have pictured the soil as peopled with gnomes and pixies, friends or enemies of mankind.

Many ancient writers fancifully portrayed the transforming of dead into living matter. The Greek philosophers taught it. Aristotle wrote, "Animals sometimes arise in soil, in plants, or in other animals." Cardano (1501-71) thought that water gave rise to fish and animals and that it was the cause of fermentation.

As late as the sixteenth century a famous chemist and physicist, van Helmont, stated that mice can be generated spontaneously by placing some dirty rags together with a few grains of wheat or a piece of cheese in a dark place. Today the same philosopher's method of producing scorpions is amusing. "Scoop out a hold in a brick, put into it some sweet basil. Lay a second brick upon the first so that the hole may be imperfectly covered. Expose the two bricks to the sun and at the end of a few days the smell of the sweet basil, acting as a ferment, will change the herb into a real scorpion."

An Italian, Bononani, tells of a wonderful transformation which he claims to have witnessed. Rotten timber which he rescued from the sea produced worms; these gave rise to butterflies; and strangest of all the butterflies became birds and flew away.

Everyone took it as a self-evident fact that maggots originated spontaneously from decomposing meat or cheese until an Italian poet and physician, Redi (1626-98) took the simple precaution of screening the mouth of jars containing meat so that flies could not enter. They were attracted by the odor and deposited their eggs on the gauze, and it was from these that the so-called "worms" arose.

By the middle of the sixteenth century, the theory of the spontaneous generation of mice, scorpions, and maggots had been proven untenable. But at this time, Leuwenhoek discovered various living moving animalcules in raindrops, saliva and many putrefying substances.

Then all were sure there had been discovered the origin of life. For anyone provided with this new instrument, the microscope, could easily demonstrate for himself the spontaneous generation of microscopic cells in vinegar or produce myriads of different and interesting living creatures in simple infusions of hay or other organic material.

Needham, a Catholic priest, in 1745 placed decaying organic matter in a closed vessel. This he placed on hot ashes to destroy any existing life. On examining the contents of the vessel after a time, he found micro-organisms which were not there in the beginning. From this he evolved the theory that a force called "productive" or "Vegetative" existed which was responsible for the formation of organized beings. The great naturalist, Buffon, elaborated the theory that there were certain unchangeable parts common to all living creatures. After death these ultimate constituents were supposed to be set free and become very active until with one another and still other particles they gave rise to swarms of microscopic living creatures.

In 1769 Spallanzani repeated the work of Needham. He boiled the material for one hour and kept it in hermetically sealed flasks. He wrote, "I used hermetically sealed vessels. I kept them for one hour in boiling water, and after opening and examining their contents, after a reasonable interval, I found not the slightest trace of animalcules, though I had examined the infusion from nineteen different vessels."

But the believers in the theory of spontaneous generation were not convinced, as they claimed that the boiling had altered the character of the infusion so it was unfit for the production of life. Voltaire, with his characteristic satire, took up the fight at this point and ridiculed the operations of the English clergy "who had engendered eels in the gravy of boiled mutton" and wittily remarked: "It is

strange that men should deny a creator and yet attribute to themselves the power of creating eels." This, however, was a controversy to be settled not by ridicule but by experimental evidence.

Spallanzani answered their objections by cracking one of the flasks. Air entered and decay immediately set in. Even this was not sufficient to overthrow an age-long belief. The abiogenist argued "the sealing of the flask excludes air and the oxygen of air is essential for the generation of life."

This objection was answered by the work of many an ingenious investigator. Schulze in 1836 passed air through strong acids and then into boiled infusions and failed to find life even after the infusion had stood some time. Schwann passed the air through highly-heated tubes with the same results. To this the argument of the opponents was heat and chemicals so alter the physical and chemical composition of the air that it is unable to engender life. The work of Shroeder and Dusch (1853) was more convincing, for they found that it is sufficient to stopper bottles containing heated milk, meat, and other perishable substances and they will keep indefinitely.

Since the dawn of history, man has been interested in the wonderful process of fermentation, and although many an ingenious theory has been evolved to explain it, little more than theory existed until the classic works of Pasteur on fermentation appeared about 1837. He claimed that all forms of fermentation are due to the action of organized microscopic cells. Helmholtz and Liebig opposed this idea. The latter even scoffed at such an idea, writing: "Those who pretend that the putrefaction of animal substances is due to the presence of micro-organisms reason very much like a child who would explain the rapidity of the Rhine by attributing it to the violent motions imparted to it in the direction of Burgen by the numerous wheels of

the mills of Venice." However, the carefully planned experiments of Pasteur soon demonstrated that without micro-organisms there would be no fermentation, no putrefaction, no decay of any kind except by the slow process of oxidation.

If there were any doubts left in the minds of the scientists as to the fallacy of the theory of spontaneous generation after the work of Pasteur, they were dispelled by the work of Tyndall. He demonstrated that in an atmosphere devoid of dust, as on the tops of mountains and ingeniously constructed boxes used by him, perishable substances, if sterile when placed in such an atmosphere will keep for an indefinite period.

Thus was established the principle that life springs only from life. From the viewpoint of the welfare of the human race the most momentous discovery made by man, for on it is reared those three sciences which have done so much to prevent, alleviate, and cure human ills—bacteriology, pathology, and surgery.

Having received from Nature the dictum that life springs only from life, the scientist has come to divide objects on the surface of the earth into two great classes—the living and the lifeless. The former possess certain characteristics which are not possessed by the latter. These properties are movement, growth, reproduction, respiration, and irritability. It is to a study of these that the scientist has turned his attention during the last quarter of a century.

Lifeless matter often manifests movement. A rock, cut from the side of a mountain, rolls into the valley below. Movement is due to position. The migration of the ameba may be closely imitated with a drop of chloroform placed in water on a superficially hardened shellac surface. A marked surface tension develops between the chloroform, the water and the moist shellac layer; soon the chloroform

and shellac commence to be moistened at some point, and at this point the surface tension of the chloroform is lowered and it seeks to spread itself out. By various modifications of this method one can imitate the chasing of small ameba by larger ones, the taking up of food and very many interesting life phenomena. In all these imitations, however, it is to be noted that the impelling factor comes from without, whereas in the living cell it comes from within. This may manifest itself as the change of position on the earth's surface, as in the case of the animal or the internal protoplasmatic movements of the plant cells. While much of this may be due to osmotic changes of the protoplasm, yet the energy comes from the food, and in this the law of the conservation of energy has been found to rigidly hold. From it we are learning that the efficient engines for the transformation of energy are not man-made but the natural living cells. And although in this respect the body of man is wonderful, yet the little firefly we observe darting about on a dark summer evening, is probably the most efficient dynamo in existence.

Growth, yes lifeless material, grows as even the young boy understands as he rolls his snow man. A lump of copper sulphate thrown into a dilute solution of potassium ferrocyanid soon develops a brown envelope which throws out upward-growing runners, and in half an hour's time the fluid is filled with figures which vividly recall both the shape and color of the seaweed. The weight of the resulting artificial plants may be 150 times that of the original copper sulphate. We all know that a crystal placed in the mother liquid grows. This has been likened unto the growth of the living organism, but only a moment's thought is necessary to show that the likeness is only superficial. Crystals grow by the addition of a like material, whereas the living cell takes dissimilar substances and transforms them into another material—living tissue.

Inasmuch as growth viewed from the physiological viewpoint consists of the transforming of unorganized food stuffs into new chemical entities which constitute the organized protoplasm of the animal, it is evident that the living organism must have food. It is but a short time since the rule was that the food of man should contain carbohydrates, fats, proteins, and water. Ash was looked upon more as an impurity which was tolerated but not essential until it was found that an animal on such a diet dies sooner than another receiving only water. Ash then was found essential not alone as building material but as a regulator of body processes, and some even claim that life phenomena function even more through the mineral elements than through the organic. Today we know that a diet consisting of carbohydrates, fats, proteins, ash, and water will not maintain growth unless the growth promoting vitamin B is present, and even then for only a short time unless the regulatory vitamins A and C are also included in the diet. Nor is the kind of protein without significance. The growth-promoting lysine and the regulatory tryptophane must be contained within their molecule.

The diet may meet all these requirements and still there be no growth even in the young animal, or when there is growth it may be abnormal as in the case of rickets where there is a defective parathyroid or absence of Vitamin, or the myxoedemic conditions which results when there is under-activity of the thyroid. The results which have been obtained in transforming the cretin into a normal individual is a metamorphosis as wonderful as the transforming of the tadpole into the frog. Gudermatsch made the remarkable discovery that even this metamorphosis, which in our climate usually occurs during the third or fourth month of life of the tadpole, can be brought about at will even in the youngest tadpoles by feeding them with thyroid gland—no matter

from what animal. By feeding very young tadpoles with this substance frogs no larger than a fly can be produced. Allen added the observation that if a young tadpole is deprived of its thyroid gland it is unable ever to become a frog, and it remains a tadpole, which, however, can reach a long life and continue to grow beyond the usual size of the tadpole. However, when such abnormal tadpoles are fed with thyroid they promptly undergo metamorphosis. Similarly the thyroxin governs the form and rate of growth in man.

The size which the individual reaches is not alone determined by inheritance and the food received but also by the activity of the pituitary gland. For today in animal experiments there is produced at will the giant or the pygmy by the use of tethelin. These discoveries have placed in the hands of the dietician and physician weapons against abnormalities of growth in stature and in mind which in the age of mythology were attributed only to the gods.

In man there are periods of rapid growth followed by quiescent periods. These are three in number, each beginning with a period of relatively slow growth followed by a period of very rapid growth and culminating with the termination of the cycle in a period of slackening growth again. In the case of the first two cycles, this slackening of growth is followed by a fresh spurt of acceleration due to the succeeding cycle. The first cycle closes toward the end of the first year, the second about the sixth year, and the third at maturity. It has been recently shown by Robertson that these cycles of growth obey the equation of an autocatalyzed mono-molecular reaction.

The third characteristic of the living, and the only property it is certain that some of the simpler organisms possess—organisms too small to be seen with even the most powerful microscope—is that of reproduction.

Although the morphological changes occurring in multiplication have long been studied, it is only recently that successful attempts have been made to study that first stage in reproduction—fertilization. The work of Loeb on the egg of the sea urchin or frog has demonstrated that they may be successfully fertilized by treating first with a dilute solution of butyric acid and then with hypertonic sea water. When thus treated, the unfertilized egg develops into the adult, possessing maternal characteristics. This called forth from the laity the statement that life had been created, but the answer from the scientist came, "No, life has not been created. There has only been arrested a chemical process which has its origin with the origin of the cell and which ultimately ends in the death of the organism." To test this proposition the unfertilized cell was treated with antiseptics strong enough to retard enzymic action but not strong enough to kill the cell, and even the unfertilized cell developed for some time. Moreover, Loeb found that the duration of life, barring accidents and bacteria, in the metazoa is inversely proportional to the temperature at which that animal is living. Decrease the temperature ten degrees and one doubles or trebles the length of life. Or in other words, living matter within certain limits obeys the temperature law of van't Hoff and Arrhenius.

If certain salt-water fish be placed in a solution of common salt having the same osmotic pressure as has sea water the fish soon die. Death in this case is not due to a lack of food, as a similar fish placed in distilled water lives for some time. Now, if a small quantity of calcium chlorid had been added to the first solution the fish would have lived. Moreover, if the heart be removed from the body of an animal and placed in a salt solution, it soon dies, but if small quantities of calcium salts be present the heart beats normally. Now, the tissues of the animal are all

bathed during health in a solution having a balanced composition, but in some diseases this concentration is changed. Hence, we have abnormal function, or even death. This plays a part in many nervous disorders. Probably it is often the prime factor in chorea, or even some tumorous growths may have their origin in some such fashion. Moreover, this discovery explains the action of many of the common cathartics on the human organism. Inasmuch as they are calcium precipitants, they leave an unbalanced condition in the protoplasm—hence, the increased muscular contractions.

The same laws hold in the unicellular and multicellular plants, that is, there must not only be sufficient mineral food, but it must be in the right proportion. Hence, when viewed by themselves the experiments on the fertilization of the egg appear trivial, but from them has been developed this fundamental law—"Normal life is possible only when necessary salts combine with the colloids of living substances in a definite ratio."

Finally we have two other properties of living matter—respiration and irritability—which often require special apparatus for their detection but which are just as fundamental as the others. All living things respire and consume oxygen, liberate energy, and give off carbon dioxide. This is obvious in the case of man but not in the case of the potato; but allow water to find its way into the potato pit, and the potatoes are drowned as man would be. Two kernels of wheat side by side appear the same—one is alive and will grow if placed in suitable soil, the other is dead and will not grow. The two seeds placed in the chamber of a biometer show unmistakable differences in the quantity of carbon dioxide production.

Both the living and the dead seed gives off carbon dioxide, the difference being only in quantity. The living cell, however, markedly differs from the dead in that it is irritable.

Prick a man with a pin and he jumps and says, "ouch," or he may use stronger language. Prick the living seed with a pin and it also jumps and says, "ouch," but in language which it requires the biometer to detect and interpret. It gives off more carbon dioxid. This is true of all cells even in the nerves which many seem to think obtain their energy from some other source than the metabolized food. This property of increased carbon dioxid output and irritation is so general that it has come to be spoken as "A chemical sign of life." By following this gaseous exchange in the higher animals it is possible to determine whether carbohydrates, fats, or proteins are being burned, or whether one is being transformed into one of the others.

For years, all these transformations were explained by the statement that they were "Cell activities." But refined chemical and biological methods have made it possible to push aside the mantle surrounding the cell and to gather some of the engines with which life acts. And today many scientists are busy studying these engines—the enzymes. At first attempts were made to obtain the purified product, but inasmuch as we have no criterion by which purity can be judged and further because of the extreme unstability of the product, the work is extremely difficult. Efforts therefore are being made to synthesize the enzymes and to learn the laws governing their activity.

Advances have already been made. Euler has produced an artificial oxidase, Falk an artificial lipase. The synthesis and control of artificial enzymes will revolutionize the science and art of organic synthesis. It may make it possible to control or combat pathological conditions in the human organisms.

All the vital steps in digestion are due to enzymes. When they fail due to disease, will it be possible to replace them by the laboratory product? The diabetic has lost his power to oxidize sugar. It is due to the absence of an

enzyme or an activator? If either, will it be possible to replace it by a synthetic product and thus save from a living death these unfortunate individuals? The sugar-beet by means of its leaves gathers carbon dioxid and kinetic energy. Through its roots it drinks in water. In the cell they are transformed into sucrose. Sometime in the future will the sugar factory be a place in which carbon dioxid of limestone through the intervention of catalysts be made to combine with water, thus producing formadehyde which on condensing will yield sugar?

Having synthesized the carbohydrates, why not the fats, and finally the proteins, and thus the laboratory in place of the field become the source of food of man? This I grant is imaginary and today sounds like a dream. But we must remember that synthetic alazarin red and indigo blue have replaced the natural products from the madder and indigo plants. Camphor no longer comes only from the camphor trees. The synthetic perfumes are destroying the flower industries of Italy and France. Cocaine has been replaced by the synthetic product, procaine which possesses all of the anaesthetic properties of the natural product and is devoid of its toxicity. A synthetic modification of quinine bids fair to accomplish in the case of pneumonia what salvarsan and quinine are doing in the case of syphilis and malaria. Today it appears as if a synthetic drug had conquered the horrible plague, leprosy. Hence, it requires a vivid imagination to even portray the possibilities of the future.

We have seen how rich has been the harvest from a functional study of the living cell. No less interesting and remunerative has been the structural study. You all recognize that there are no two men exactly alike. The cattlemen tells us that he has no two cattle alike, the sheep herder that there are no two sheep alike, the botanist that no two leaves or blades of grass are alike, and now the

biologist tells us that the proteins composing our tissues are different from those composing the tissues of other individuals. Our individuality goes back to each individual cell. True, they are composed of the same amino acids, but these are arranged in different combinations. Now, from the nineteen amino acids could there be produced enough different proteins for all? Calculating the theoretical number of permutations and combinations we find there to be no less than two million billion different proteins. These, while the stream of life is coursing through the living cell, are held in a certain liable position. When death comes they swing back to the stable.

Throughout the study of the living cell, one is impressed with the order, the correlation, the smooth and compact way in which the reaction goes on in the living cell in opposition to the many imitative methods of man. One example will make this clear. Man fixes nitrogen by means of a gigantic arc light in a chimney through which a current of hot air is blown. The flaming disk has a diameter of seven feet and reaches a temperature in the neighborhood of $6,300^{\circ}$ F. The product dissolved in water gives us nitric acid. In another method, air is cooled to 194° C, the nitrogen boiled off, mixed with hydrogen in the proportion of 1 to 3, heated to a temperature of $1,300^{\circ}$ C., and then passed over finely divided uranium. There results ammonia. Thus, in synthetic processes great variations in temperatures and huge, complicated, expensive apparatus are used.

When the bacterial cell fixes nitrogen there is also a real conflagration in which plant residues act as the fuel and the bacterial body the furnace. But how different are the two! The living cell is 90 per cent water and weighs only one two-hundredth million of a milligram! It works in the dark, damp, warm soil and generates little heat and

no light. It produces not simple nitric acid and ammonia but the highly complex proteins.

This living cell is an engine which not only does its work, but it repairs its own worn-out parts. It works by means of enzymes. The reactions of each are accurately timed to meet the reactions of all the others and to meet the requirements of the living cell. Old protoplasm is torn out, new is made to take its place. The carbohydrates and fats are systematically fragmented so the energy is nicely liberated to meet the needs of the living organism. However, when the master of ceremonies, life, departs each works independent of the others. They pull and they tear until they destroy their very home. It is as if they are vying with each other to see which can do the most damage. A study of the reactions which go on in the living cell begets in the mind of man a reverence akin to worship, and we can readily understand how Dr. Hodges of Princeton could have said in all solemnity just before the performing of an experiment, "Boys, remove your hats. I am going to ask God a question."

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MEMORY, FORGETFULNESS, AND MISTAKES
OF RECOGNITION IN WAKING
AND DREAMING

"THE SHIP was no sooner got out of the Humber than the wind began to blow, and the sea to rise in a most frightful manner; and, as I had never been at sea before, I was most inexpressibly sick in body, and terrified in mind. I began now seriously to reflect on what I had done, and how justly I was overtaken by the judgment of heaven for my wicked leaving of my father's house, and abandoning my duty. All the good counsels of my parents, my father's tears and my mother's entreaties, came now fresh into my mind. . . ." Many years after Crusoe experienced this rush of memory he again recorded, "that my imagination worked up to such a height, and brought me into such excess of vapours, or what else I may call it, that I actually supposed myself often upon the spot, at my old castle, behind the trees; saw my old Spaniard, Friday's father, and the reprobate sailors I left upon the island; nay, I fancied I talked with them, and looked at them steadily though I was broad awake, as at persons just before me; and this I did till I often frightened myself with the images my fancy represented to me."

In such experiences memory reminds us, by a vigorous display of power, of its ability to reinstate the past. This power of reinstatement may be embarrassing: a lecturer, who, on mounting the familiar rostrum, faced in

memory all his past audiences and reminiscently delivered to them all the addresses he had ever given, would be disqualified from lecturing by a usurping act of memory. This power of reinstatement may even drive into insanity: "A world of disorderly notions, picked out of his books, crowded into his imagination; and now his head was full of nothing but enchantments, quarrels, battles, challenges, wounds, complaints, amours, torments, and abundance of stuff and impossibilities; insomuch that all the fables and fantastical tales which he had read seemed to him as true as the most authentic histories."¹ The mind secures advantage from its endowment with the reinstating power of memory by an ability, under normal conditions, to restrain its tendency towards making the past masquerade as the present or towards insisting that the present shall be excluded by recollections. Since we live in the present for the sake of the future, memory must be forbidden to compel us to live in the past. Forgetfulness brings troubles, but there is compensation in knowing that it is a consequence of relief from the always imminent tyranny of recollection.

It seems certain that consciousness, when it first appeared, looked forward before it looked back and that it has always remained more essentially anticipative than reminiscent. The event just coming demands attention; the event just past has already received it. Kirkpatrick applies this principle of the precedence and predominancy of the anticipative over the recollective by supposing that, in the order of the development of consciousness, indefinitely anticipatory images of "general coming character" precede reminiscent images of elements as having occurred in other situations or series:² the animal can realize that certain events will or may happen before it can remember

¹ *Don Quixote*, pt. 1, ch. 1.

² *Genetic Psychology*.

that they happened before. Memory is primarily an aid to anticipation: the past event originally received attention because it may disclose what is to come. We cannot enter into any animal's mind to confirm by observation or experience any inferences we may draw; but it seems reasonable to assume that "memory" was originally an adjustment to situations by previous experiences of similar situations and neither actual recollections nor explicit reference to them in consciousness. The behavior of very humble organisms is affected by memory in the general sense of learning to act appropriately through experience. *Stentor Raeselii* is a small trumpet-shaped unicellular protozoon. It lives among slowly decaying vegetation in marshy pools, attached, for the most part, to particles or "stalks" of debris by its "foot"—a protrusion of protoplasmic material from its body. A cloud of carmine or Indian Ink, blown at it, interferes "with its normal functions." When stimulated by such blowing it endeavors to escape by various bending movements: usually twisting itself round its "stalk." Failing to evade the unwelcome clogging, it may then reverse the movements of the cilia which normally sweep particles of possible food into its "mouth": unable to wriggle out of the cloud, it tries to spit it away. Finally it contracts sharply, breaks away from its "stalk" and swims off: discovering the impossibility of removing the cloud, it removes itself. On repeating the experiment after it has again attached itself to a "stalk" it *CONTRACTS AT ONCE*.³ *Stentor Raeselii* thus learns by experience that wriggling or spitting is useless against an invasion by carmine and swims away at once, without any useless preliminaries. It is not necessary to suppose any consciousness at all in this performance, though its presence may be strongly suspected, to recognize the beginnings of memory. The effects of previous useless attempts at evasion and of

³ H. S. Jennings, *Behaviour of the Lower Organisms*, *Stentor Raeselii*.

a finally successful effort impress upon the animal a tendency to react appropriately when carmine is squirted at it. It forgets in time and has constantly to rediscover the necessity for swimming away if the experiments are repeated at long enough intervals: forgetfulness wipes out the tendency impressed by past events. Memory may be nothing more among lowly organisms than more or less permanent adjustments of their activities when past events impress upon them tendencies to react in certain ways under certain circumstances. Such elementary memory may be simply, as Kirkpatrick puts it, a tendency to repeat an act that has been justified by its results in the past. The animalcule *Vorticella*, made sick with yeast, was found by Hodge, Kirkpatrick observes, to refuse any more for several hours.⁴ A habit of avoiding yeast, fixed in the animal by a past event and decaying in a short time, is all that can be positively observed and all that it is necessary to affirm.

No more can be observed and no more need be affirmed when much higher animals than *Stentor Raeselii* or *Vorticella* exhibit memory. When hens see their keeper coming with a dish they expect to be fed because they have previously experienced that sequence of events. They *MAY* remember past occasions on which they were fed after their keeper's appearance, but they *NEED* not do more than anticipate a meal. Past events need only impress upon their minds a tendency to expect food when their keeper comes. Such anticipatory consciousness, usually or often associated with pre-adjusting actions, is all that can be discovered in much human behavior, perhaps in most of it, that is obviously determined by memory. When the business man, who has dallied in bed, hears a whistle before he reaches the platform, he does not recollect past approaches of his train that followed after whistling: he simply realizes a need for hurry. Past experi-

⁴ *Genetic Psychology*.

ences, indeed, may, at that particular moment, be said to do little more than result in a wild impulse to run. Primarily then, memory is an adjustment of the organism by past experience to act in some particular manner or consciously anticipate some particular event when it is in some particular situation.

Memory proper, the explicit recollection of past events or ideas as it obviously occurs in human consciousness, is an extension of its original function of impressing, through past events or experience, tendencies upon the organism as a whole or upon its body or upon its mind to react in definite ways. It may act exclusively upon Stentor Raelisii through its physiological mechanism; it may simply induce the hen to run hard for its meal; it may be confined, even in the human being, to stimulating hurry. It may, and does, also impress upon the human mind a tendency to reinstate in consciousness sounds once heard or things once seen as recollections. This important extension of its fundamental method enables the human mind to *REFER*, explicitly, definitely and copiously, to its past. Human beings can search through their past, in so far as memory has not succumbed to forgetfulness, to enquire about the present. They can deduce, by systematically consulting their recollections, interpretations of the present and appropriate procedure to meet it, if memory fail in the spontaneous guidance which was all it could offer in its beginnings. There is, doubtless, no clean cut at any point between animal and human consciousness: higher animals can refer, it is virtually certain, to their past through recollection. It is also virtually certain that the range of recollection is incomparably wider in man than in the animal and in this respect, as in the power of utilizing recollections for logical deductions and abstract conceptions, man, as the late Pro-

fessor Durkheim observed, is less the animal developed than the animal remade.⁵

The reminiscent mood becomes available for man with this extension of tendency promoted by memory. Recollections, stirred by some casual event, as when an old friend is met in the street, or deliberately evoked, as when a parent describes his youth to his child, take men away from the present to live again in the past. History is the extension of this personal reminiscence to include, so far as is possible, the whole human past and the story of the cosmos itself. The child eagerly relating what it has seen or done is a fruit of the power to reproduce the past which is the final achievement of memory. Its interest in the doings of others, in the deeds of the present and of the past, as another; and the conclusion of the whole matter is an assiduous search among any records, past or present, that can assist in the reconstruction of the whole story of human life and of the universe in which it was lived. Thus history vividly and comprehensively surveys the vast extension of knowledge conferred by memory when it proceeded from imposing tendencies to conscious realizations of present situations to impose a tendency to reinstate past experiences.

The plight to which too insistent recollection can reduce the mind, the plight of Crusoe and Don Quixote, necessitates a restraint upon it. Actual, positive recollection, the articulate, definitely conscious memory of past events is kept very persistently out of normal consciousness. We do not wander through our streets, recollecting at each step our many journeys in the past; we do not buy again in memory our former purchases, nor meet again, in memory, all the people whom we have ever met. If we did, our present would become one constant memory of our past,

⁵ *The Elementary Forms of the Religious Life*, Eng. Trans. by F. Joseph Ward Swane.

and the older we grow the more completely would memory keep us in that past. Memory would play us a scurvy trick instead of helping us more and more adequately to interpret the present. Normally, memory simply acts as a mental adjustment—enabling us to recognize the route we have traversed before without any real consciousness that recognition is present. Past experience places tendencies within us to avoid sitting on pins, to realize we must open the book we wish to read or blow the fire when it is low: tendencies that are memory in the wide sense but not memory in the sense of explicit recollection of the past. Explicit recollections are always at our service and do constantly arrive. "And yet what is the feeling of lovers," said Socrates, "when they recognize a lyre, or a garment, or anything else which the beloved has been in the habit of using? Do not they, from knowing the lyre, form in the mind's eye an image of the youth to whom the lyre belongs? And this is recollection. In like manner any one who sees Simmias may remember Cebes; and there are endless other things of the same nature."⁶ Human consciousness is ever ready, in addition to adjusting the mind to constant reaction in understanding what is presented to it, to flash upon it distinct, articulate recollections definitely reproductive of the past. The operations of memory can be clearly, though figuratively, represented by a crowd of recollections constantly storming at the door of consciousness which is kept by a guardian. The guardian endeavors to let through only those recollections that are needed; the recollections incessantly strive to enter. Sometimes a recollection is not handy at the door when the guardian looks for it to let it in: we cannot remember a scene or a name or something that happened. It may be that as life's experiences continually add to the crowd obliviscence continually thins it, just as birth and death continually increase

⁶ *Phaedo*, Jowett's trans., L 73.

and decrease the people of a country; it may be that no recollection ever dies, though it may, to continue the metaphor, be pressed permanently to the rear of the storming crowd. This metaphor misleads if it is not remembered that recollections are not things that dodge in and out of consciousness as a door opens to them or shuts behind them. A recollection is a mental response just as a jump from a flying stone is a physical response. Experiences of painful contacts with moving bodies impress a tendency to avoid them; the sight of the sea impresses upon the mind a tendency to recollect that seeing when something, it may be the word "sea" or a sailor walking down the street, prompts that tendency. There is no need to apologize for metaphors, for nothing mental can be discussed for long without metaphors, but it is necessary to make certain that our metaphors stick to their lasts and do not claim to express more than they are qualified for expressing. Normal troubles of memory are so often efforts to recollect what will not be recollected that we are not aware of the chief office of the guardian or even aware of him at all. A failure to remember may be a success in shutting out a too pertinacious recollection, and an apparent effort to recall it may be an attempt to relax effective measures of prevention against it. If recollections are to serve us well they must be eager to enter our consciousness, so that we can have them when they are needed; if they are not to force us ever from the present into the past they must be under restraint. Thus one chief function of memory is to prevent recollection—the crowd of memories must be kept on the thither side of the door. For every recollection memory admits it must refuse a thousand.

Dr. Wildon Carr has recently reminded us that Bergson regards our range of mental activity as essentially determined by inhibiting mechanisms that make us oblivious

of everything except what it concerns us to know.⁷ If too many recollections enter consciousness it becomes a bubbling cauldron in which attention is too distracted to be plain and intelligent. Juliet's nurse grossly abused her "inhibiting mechanisms": so grossly that she could not answer plainly when Lady Capulet asked her for Juliet's age:

NURSE: Faith, I can tell her age unto an hour.

LADY CAPULET: She's not fourteen.

NURSE: I'll lay fourteen of my teeth,—
And yet, to my teen be it spoken, I have but four—
She is not fourteen. How long is it now
To Lammas-tide?

LADY CAPULET: A fortnight and odd days.

NURSE: Even or odd, of all days in the year
Come Lammas-eve at night shall she be fourteen.
Susan and she—God rest all Christian souls:—
Were of an age: well, Susan is with God;
She was too good for me, marry; I remember it
well.

'Tis since the earthquake now eleven years;
And she was wean'd,—I never shall forget it,—
Of all the days of the year, upon that day:
For I had then laid wormwood to my dog,
Sitting in the sun under the dove-cote wall,
My lord and you were then at Mantua:—

And so, as the guardian of the door, the "inhibiting mechanism," dozes, the stream of recollection flows on until Lady Capulet exclaims:

"Enough of this; I pray thee, hold thy peace."⁸

The nurse cannot face the present because she systematically, or unsystematically, retires into her past. Cru-

⁷ Review of Bergson's "L'Energie Spirituelle," *Hibbert Journal*, Oct., 1919.

⁸ *Romeo and Juliet*, Act 1, Sc. 3.

soe's painful throbs of recollection, Don Quixote's chivalrous madness, the garrulity of the Capulet nurse, are serviceable readiness of recollection unrestrained by memory's repressive hand.

Primarily and originally memory uses past experiences to direct or illuminate the present, as we use a lamp to see in a room that would otherwise be dark. When it reinstates or reminiscently restores these past experiences as recollections a check is needed on their rush to enter consciousness. Mental efficiency depends largely on successfully insisting that recollection shall be relevant: garrulity, the diffuseness and blundering of ill-trained minds, are largely composed of irrelevant memories. But relevancy is not the whole duty of recollection: it must also keep to its own role and not confuse itself with new experiences or thoughts. The contrivances of memory include, no doubt as part of the same fundamental mechanism, both inhibition of irrelevant recollections and restriction of them to their own proper role. A consciousness in which recollections of the past were constantly pretending to be experiences of the present and experiences of the present to be recollections of the past would be as confused as a play where the actors continually acted or spoke one another's parts. Now from time to time, recollection avoids the contrivances of memory to restrain it or confine it to its own role. In moments of excitement or stress recollections may insistently enter the mind: they may, from time to time, succeed in their insistency when the guardian of the door dozes or lapses; they may also masquerade as present or new mental experiences by avoiding the contrivances of memory to stamp their own real nature upon them.

Plagiarism is often "unblest theft"; it is also often a genuine mistake: we can and do mistake memories for our own ideas. Cryptamnesia, mistaking recollections for fresh thoughts or new perceptions, may be a suspicious

refuge for the plagiarist; but it is, at all times, an actual occurrence in mental life. Jung remarks that glossolalia is a cryptamnesic phenomenon.⁹ From time to time, in periods of excitement, often religious in origin, men and women speak wildly and incoherently—using words or phrases that are unintelligible to their hearers and to themselves. Many of these words or phrases are found to be from languages unknown to the speakers. They have been unconsciously received by hearing or seeing them and finally uttered, under the impression that they were inspirations of the moment with some sacred or divine meaning: casual recollections, unorganized into the system of the mind, are mistaken, when they rush into consciousness, for intimations from without. Cryptamnesic interpretations, like many legitimate explanatory resources, can be abused and disputes easily arise when one writer explains by cryptamnesia what another writer explains by something else. Rignano cites a predictive dream for cryptamnesic solution. Maury dreamed of meeting a person he did not know and met him a few days after. Rignano suggests that he had probably met him before without remembering him. Maury, he adds, on the day before his dream, had passed down a street which he had used frequently in the past and might have seen him there unconsciously.¹⁰ Believers in veridical dreams will smile at this suggestion and describe cryptamnesia as the last refuge of a sceptic. It is, however, not an imaginary refuge, because, though it is often difficult to prove or seductive to assume, it seems certain that recollections can be, and often are, mistaken for freshly originated thoughts or newly experienced perceptions.

Speculative discussions on cryptamnesia versus deliberate plagiarism, collecting naturally round the difficulty of determining whether an idea be a masquerading recol-

⁹ *Collected Papers on Analytical Psychology*, ch. 2.

¹⁰ *Essays in Scientific Synthesis*, ch. 5.

lection or not, can give some entertainment in compensation for that difficulty. Cowper wrote of

". . . the cups,
That cheer but not inebriate."

Had he read Bishop Berkeley's praise of tar-water, ". . . proportioned to the human constitution as to warm without heating, to cheer but not inebriate"?¹¹ "Longfellow," wrote Walsh, "has so accurately translated the Anglo-Saxon metrical fragment 'The Grave,' that his version agrees almost verbally with the Rev. J. J. Conybeare's. More recently Mr. Thomas Hardy appropriated an entire chapter from 'Georgia Scenes,' by an almost forgotten American humorist, and with the few necessary verbal changes inlaid it in his 'Trumpet-Major.' All these examples, a handful picked out at random, go far to justify Horace Smith's definition of originality as 'undiscovered or unconscious imitation.'"¹² Plagiarism is always with us and so, we may conclude, is cryptamnesia. The latter is welcome enough, and so is plagiarism, if it be rational: a good passage may as well live by adoption as die through neglect.

In cryptamnesia, recollections succeed completely in deception and palm themselves off as new ideas. Cryptamnesia is a complete remove from normal identification of memories as recollections and of experiences that are not memories as new ideas or perceptions. There is also an intermediate condition of uncertainty in which we are doubtful whether we are seeing or thinking for the first time or remembering what we have seen or thought before. This paramnesic state is usually one of bewilderment and marked by a feeling of weirdness—as if there were a sharp hitch in the working of the memory mechanism. Bergson

¹¹ Walsh, *Handy-Book of Literary Curiosities*, p. 209.

¹² *Op. Cit.*, p. 899.

calls it, "*Le Souvenir du présent ou la fausse Reconnaissance*," which Mr. Wildon Carr describes as a bewildered state in which the patient seems to live a remembered experience over again and experience as an actual present-sense something that he feels has happened before.¹³ A present experience may be definitely mistaken for a memory, or a memory may be definitely mistaken for a new experience. In ordinary paramnesia we oscillate confusedly between perception and memory—uncertain whether we are in past or present. On turning the corner of a street we have never walked up before we seem suddenly to recognize a place we have never, to our knowledge, previously visited. As we turn the page of a book a weird feeling rushes over us that we have done this often before and for the moment we are uncertain whether we are remembering the past or experiencing the present. The possibility of this confusion seems to depend on the presence of recollections which sufficiently resemble present perceptions or ideas to be confused with them. We turn over pages of books often enough to have plentiful memory of present action; streets resemble one another and we are acquainted with many. Sometimes it is possible to discover that there were recollections, unsuspected by us, which could have confused themselves with the act of perception. A man, of artistic temperament, was conscious, as he approached the gateway of a Sussex castle, of having seen it before and he seemed to see donkeys beneath the arch and people on its top. He had never, to his own knowledge, visited the place before. He subsequently learned from his mother that he had been taken, when eighteen months old, to this very castle in the panniers of a donkey: there had been visitors, at the time, on the top of the arch.¹⁴ Professor Ward thus seems quite justified in referring paramnesia to a reminder by what is happening of a preceding experience similar

¹³ Review of "Bergson's *L'Energie Spirituelle*," *Hibbert Journal*, Oct., 1919.

¹⁴ Quoted by Eugenio Rignano in *Essays in Scientific Synthesis*, ch. 5.

to it. We are bewildered, he says, because we cannot assign to the paramnesic experience its place in the past: we are alternately or simultaneously solicited to perceive what is happening now and to remember the same event as it happened before. The origin of the "Sussex castle" paramnesic moment intimates also that in such experiences there may often be the feeling, noted by Ward to be frequently present, of knowing what will happen next.¹⁵ Professor Strong remarks on "the curious phenomenon of false recognition of which most of us have had occasional experience." The term "false recognition" appears to be used because a present experience is confused with a recollection which only resembles it without perfectly duplicating it. His explanation, however, is the same as Ward's: "It is due perhaps to mistaken identity—to the psychic state being very nearly like one that *WAS* previously real, and might legitimately have provoked the reflection."¹⁶ Maeterlinck extends the range of paramnesic possibility to include prenatal reminiscences. "It happens fairly often," he writes, "that a man who finds himself in an unfamiliar country, in a city, a palace, a church, a house, or a garden which he is visiting for the first time, is conscious of a strange and very definite impression that he has seen it before.'" Sometimes, he adds, he can actually act as guide.¹⁷ This is a lucid statement of a curious and weird experience; but it need not too readily persuade us to admit prenatal recollections into paramnesic confusions. Life stores our minds with recollections; countries, cities, palaces, churches, houses and gardens have their common stocks of resemblances: confusion between present experiences and recollections, derived from many diverse sources, which resemble them, probably covers all cases of paramnesia.

¹⁵ *Psychological Principles*, ch. 5.

¹⁶ *The Origin of Consciousness*, p. 250.

¹⁷ *Mountain Paths*, ch. 18.

Cryptamnesia and paramnesia occur in dreams as well as in waking consciousness. Scenes from past life appear in dreams as present realities. In the normal or average mind the moment of dreaming is the moment of triumphal invasion by recollections. They burst past the guardian of the door and for the moment they persuade the dreamer that his past life is being lived now. They succeed more perfectly in deceiving him, in inducing him to mistake remembrances for new experiences, by recombining the incidents of his past life into a new life—a life in which the old incidents have a new order and arrangement. According to Freud, the materials out of which the dream is constructed consist of memories of previous impressions. Impressions from the few days previous are preferred, though any one may be employed and they are often drawn from scenes of childhood.¹⁸ Recollections of a childish escapade, of a youthful indiscretion and of a recent adventure, brought out of their contexts and united into a new incident, can more successfully simulate originality than if they were remembered exactly as they occurred. The dreamer frequently realizes on waking, without special study or systematic search for the originals of his dream situation, that he has appeared to live through an incident really restored by memory. He has run for the train he hurried to catch the day before or he has visited the place where he played as a child. The dream is obviously, constantly and vividly a periodic cryptamnestic visitation: a familiar recurrence of recollection posing as perception.

The sorting mental mechanism, designed to exclude irrelevant or unnecessary recollections, fails always in the dream to stem the rush of reminiscence. It usually fails as well to sort out the entering recollections and identify them with their true nature: they are too many, too insistent, too vivid, too free from competitors to be known for

¹⁸ *The Interpretation of Dreams*, Brill's Trans., ch. 5.

what they are. But sometimes, even in dreaming, consciousness drops into a doubtfulness, comparable with the paramnesic waking state: the dreamer is uncertain whether he is remembering or perceiving. A man dreamed that he was in a laboratory, superintending an evening class in chemistry. This first scene reproduced with virtually perfect fidelity from his past life. He recognized the place and he recognized his old colleague working with him as he had done years before. The illusion was complete in this first phase of the dream for he had no doubt that he was doing what he appeared to do. Then he left the laboratory to return to his rooms. When he arrived home in his dream he suddenly realized, with painful urgency, that he had similar duties to perform the next morning in a distant city. Then the paramnesic moment arrived. Was he dreaming? he asked himself, or was he doing what he seemed to be doing and seeing what he seemed to see? A contrast between his apparent situation, reproduced in reality from his past life, and his consciousness of a present existence obviously made him doubt whether he were remembering the past or perceiving the present. This was a dreaming variety of paramnesia—a confusion of mind, a doubtfulness whether he were remembering the past or perceiving the present. This dream was remarkable for its expulsion of paramnesic doubt by concluding that it was not a dream but a reality. The dreamer argued to himself from the vividness and solidity of the laboratory scene that it was real and not fictitious. Waking then reversed this deduction and the dreamer was delivered from his anxiety about his present duties.

A dream in which the dreamer knows he is dreaming is the more usual result. In many such dreams the paramnesic moment of doubt is clearly distinguishable before the dreamer definitely realizes that his dream is a dream; in others it passes too rapidly into the final deduction to

be identified. It is interesting to observe that in many dreams where the dreamer knows he is dreaming the failure of the sorting mechanism is compensated by very definite cues to the situation. The "laboratory" dream belongs to a type or class of dream specifically marked out by a sharp, keenly appreciated contrast between past and present duty: the dreamer believes he is at school while he is conscious of his vacant office stool, or he keeps a past appointment knowing that he should be elsewhere. In this variety of dream the sharply felt contrast between apparent performance and present existence gives the dreamer his cue. Many dreams in which the dreamer realizes he is dreaming belong to the repetitive type. Repetitive dreams, dreams which recur (often very frequently), obviously hint to the dreamer that he is dreaming. Dreams of gentle falling, like Alice's descent into Wonderland, recur frequently with some people and are often recognized as dreams while they are in process. If a dream has been experienced before it will obviously be more readily recognized as a dream when it occurs again. Leigh Hunt observed that "nothing is more common, or usually more pleasant, than to dream of flying . . . the dreamer sometimes thinks he is flying in unknown regions, sometimes skimming only a few inches above the ground, and wondering he had never done it before. *HE WILL EVEN DREAM THAT HE IS DREAMING ABOUT IT . . .*"¹⁹ Statistical enquiry has confirmed the wide distribution of the dream of flying and its frequency in the dreaming of many individuals.²⁰ Thus, Leigh Hunt had probably received a hint, by stumbling on a conjunction between the recurrency of the flying dream and the dreamer's realization that it is a dream, that, when dreams recur, recollections of their previous occurrences assist the sleeper to perceive their real nature. The recurrent dream of one gentleman

¹⁹ *Essays: of Dreams.*

²⁰ Hutchinson, *Dreams and their Meanings.*

is always known to be a dream when it is experienced. He dreams regularly that he is jumping up into the air to avoid some animal and a constant consciousness of his tendency to dream in this way will obviously hint very broadly to him, even in his dreaming, to disbelieve in its reality.

There is nothing really paradoxical in the forgetting function of memory: all efficiency is selective and the selection of relevant recollections implies an unselected residuum. The turbulence of this residuum in Crusoe haunted by his past, in the madness of Don Quixote, in the temporary delusion of the dream, proclaim the need of an inhibiting mechanism of forgetfulness. The cryptamnesia of dreaming periodically reminds us how vigilantly memory must confine recollections to their own proper role; and paramnesia, in dream and wakefulness, fitfully records hitches in the mechanism of memory.

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THE NATURAL STATE OF MAN

(*An Historical Resumé*)

I. INTRODUCTORY

THE PROBLEM of the state of man before the development of civilized society and the political organization of mankind has been one of the most debated questions in philosophy, theology, ethics and social science. During much of the period of speculation on this problem its solution was chiefly *à priori* and metaphysical. While a few ancient writers, such as Herodotus, Strabo, Caesar and Tacitus, made some little effort to study backward peoples on the fringe of the classical world, most of those who discussed the question arrived at their conclusions in a deductive manner and usually in the effort to confirm some pre-assumed ethical or political doctrine. With the period of overseas' explorations, which began about 1500, more concrete data about the life of primitive man began to come into Europe, and the discussions of the natural state of man, while still dogmatic and polemic, began to seek confirmation in the actual reports of explorers. The evolutionary hypothesis, as applied to man, emphasized the long human past which had existed before the period of civilized existence and made the problem of the life of primitive man of real scientific and historical importance. The parallel development of anthropology and historical sociology made possible the inductive study of the life of early man, and has substituted the verifiable facts of sci-

ence for the dogmas and opinions of philosophers and moralists. It is the purpose of this paper to review the more important typical interpretations of the life of primitive man—the condition of man in the state of nature—from primitive days to our own.

II. PRIMITIVE AND ORIENTAL DOCTRINES CONCERNING THE NATURAL CONDITION OF MAN

One of the most interesting facts concerning primitive men is that they, themselves, often have elaborate "myths of origin" which trace their development from a distant past. Particularly is this true of the Melanesians.¹ As an actual matter of fact, these primitive tales of human origins and development do not differ widely from those which have come down to us from Oriental sources. Nothing can demonstrate this better than the reading of the parallel collections of primitive and Oriental creation tales which have been prepared by Professors Kroeber and Waterman in their *Source-Book in Anthropology*.² Indeed, one may accurately hold that the early Oriental accounts of human origins are but primitive creation stories which have assumed a position of unusual importance because of the peculiar relation of the religion, thought and literature of the Orient to the cultural tradition of Western Europe and America.³

¹ W. H. Rivers, *History of Melanesian Society*; G. Brown, *Melanesians and Polynesians*, chap. xiv.

² Op. cit., pp. 516ff.

³ W. R. Smith, *Religion of the Semites*; J. H. Breasted, *The Development of Religion and Thought in Ancient Egypt*; M. Jastrow, *The Religion of the Babylonians and Assyrians*; F. Cumont, *Oriental Religions in Roman Paganism*.

While one could spend much time discussing the Osiris Myth and the Gilgamesh Epic, as examples of Oriental myths of genesis,⁴ it is necessary in this place only to call attention to their many points of similarity to the Hebrew creation tale, as given in the Book of *Genesis*. Indeed, as Delitzsch, Winckler, Rogers and others have pointed out, the Hebrews derived most of their views on human origins from the Babylonians during the period of captivity, as well as from a general appropriation of the doctrines which were common property of the Western Asiatic Orient.⁵ The Hebrew view of the natural state of man is of special historic significance, because of the enormous influence it has exerted over the theology, ethics and social science of Western Europe since the beginning of the Christian era. Even today a great majority of those in the western world follow Mr. Bryan in accepting this primitive tale as the authoritative account of human origin and social evolution, and the anthropologist still invites serious personal criticism from the faithful when he challenges its accuracy.

The Hebrew view of the natural state of man is too well known to demand any elaborate summary.⁶ Man was created by divine act some six thousand years ago and placed in pristine paradise in the Garden of Eden. From this he was ejected because of yielding to the temptation of the Devil and his female consort in the matter of varying from the dietary prescriptions of the Deity. This "fall" of Adam and his descendants brought a general degradation of the human race, which proceeded at an accelerated rate until God in his wrath destroyed all save the family of the faithful Noah. The sons of the latter departing from the ancestral household peopled the world anew. A portion of the descendants of Shem represented by Abraham and

⁴ J. H. Breasted, *Ancient Records of the East*; R. W. Rogers, *Cuneiform Parallels to the Old Testament*.

⁵ See particularly F. Delitzsch, *Bible and Babel*.

⁶ See the remarkable summary by G. Santayana, *Reason in Religion*, pp. 92-7.

his successors were chosen by God to bring man the revelation of his word, and, as a general leaven in the wicked mass of mankind, slowly to win back others from a life of sin and worldly interests. This Hebrew interpretation of human genesis, with some considerable infiltration of Greek philosophy, formed the basis for all orthodox views of social evolution down to modern times.

III. CLASSICAL THEORIES OF THE STATE OF NATURE

Passing on to Greece one finds that, in general, the Greek thinkers held a view which was somewhat akin to that cherished by the Hebrews. While the statement cannot be made without qualifications, nevertheless, the majority of Greek writers on history and politics were inclined to believe that man had descended to his contemporary characteristics and circumstances from a previous golden or heroic age. As Professor Bury has put it: "It is remarkable how the speculation of the Greeks on primitive civilization were bounded by that tradition of a decline from a golden age, which Hesiod expressed in his scheme of the Five Ages."⁷ In regard to Hesiod's authorship of this traditional conception, Professors Botsford and Sihler make the following comment:

So far as we know, it was Hesiod who made the first attempt to divide the past into periods; and, far from conceiving a development, he assumes a succession of declines. He calls his own age the Iron age, before which have passed the Golden, the Silver, and the Bronze. Curiously enough, this process of recession and decline was for an epoch stopped or inhibited—that it, the Fourth age was a Heroic age, the period of the Seven against Thebes and the Trojan War, but now there is no intimation of any survival of that heroic spirit.⁸

⁷ Bury, *The Ancient Greek Historians*, p. 187.

⁸ Botsford and Sihler, *Hellenic Civilization*, pp. 9-10.

While what remains in authentic documents of the doctrines of the Sophists is too slight to allow anyone to speak with any certainty, many historians of Greek political thought are inclined to believe that, if they had no definite conception of a primitive state of man, they at least conceived of a pre-political stage out of which political society grew by means of a governmental compact.⁹

Plato (433-347 B. C.), however, was definite enough in his presentation of his conception of the original state of mankind so that one is left in no doubt as to his position in regard to the subject. He stands out as one of the most eloquent of the Greek exponents of the view that the state of primitive society was psychologically if not materially "golden." In both the *Republic*¹⁰ and the *Laws*¹¹ he gives vivid pictures of primitive life as he conceived it to be. He was not unqualified, however, in his praise of primitive conditions, for in his *Republic* he states that such a condition of mere material satisfaction without a development of the higher aesthetic tastes is essentially a "swine-like existence." He cannot, therefore, be classed with those who see no good in the present state of man or no evil in his original condition. Aristotle (384-322 B. C.) was too much interested in the discussion of the really practical problems of political science to be greatly concerned with speculation upon man's original state, and, in so far as he discovers any "natural" society, it is the family. He simply starts with the family as the elemental social unit and traces its evolution through successive growths and combinations into the state.¹²

While most of the writings of the original Greek Stoics have perished, we can gather a sufficient idea of their doctrines from their Roman disciples to be sure that if they

⁹ E. Barker, *The Political Thought of Plato and Aristotle*, p. 36; W. W. Willoughby, *Political Theories of the Ancient World*, pp. 78-9.

¹⁰ Plato, *Republic* (Jowett's trans.), II, 372.

¹¹ Plato, *Laws* (Jowett's trans.), III, 678-80.

¹² Aristotle, *Politics* (Jowett's trans.), I, 2.

had any conception of a primitive "state of nature" it must have been a condition of social relations, for a basic part of their doctrine was the dogma of the natural sociability of mankind.¹³ The Epicureans, on the other hand, were the founders of those doctrines which were to stand out so strongly later in the philosophy of Hobbes. They held that the primitive state of mankind might be assumed to be one of violence and inconvenience, and that organized social relations had a utilitarian origin in the necessity of union for mutual defense and coöperation.¹⁴

Polybius (203-121 B. C.), the last of the great Greek writers, presents a view of the original condition of mankind which was strikingly like that of some of the members of the early modern "state of nature" school. He says:

Originally, then, it is probable that the condition of life among men was this herding together like animals and following the strongest and bravest as leaders. The limit of authority would be physical strength and the name we should give it would be despotism. But as soon as family ties and social relations have arisen among such agglomerations of men, then is born also the idea of kingship, and then for the first time mankind conceives the notion of goodness and justice and their reverse.¹⁵

Roman political philosophy had its prototype in the various Greek thinkers and schools, and so, with the exception of the contributions of the Roman Lawyers, the political theory of the Romans was either an amplification of paraphrasing of the Greek antecedents.¹⁶ While Cicero (106-43 B. C.) claimed to be an eclectic, still his general inclination was towards the Stoics and his opinions concerning the original state of man were colored by the Stoic doctrine of the natural sociability of the human species. Thus the earliest condition of the human race was a pre-political

¹³ E. Zeller, *Stoics, Epicureans, and Sceptics*, pp. 293-6.

¹⁴ *Ibid.*, pp. 462-3. Diogenes Laertius, Book X, Chap. xxxi, Secs. 33-5.

¹⁵ Polybius, *Histories* (Trans. by Schuckburgh), VI, 5-6.

¹⁶ F. Pollock, *A History of the Science of Politics*, pp. 31-2.

rather than a pre-social state.¹⁷ In his *De Republica*, he says: "It is necessary to presuppose the original seeds (of a commonwealth) as it were, since we cannot discover any primary establishment of the other virtues, or even of a commonwealth itself. These unions, then, formed by the principle which I have mentioned (spontaneous sociability), established their headquarters originally in some central positions, for the convenience of the whole population; and having fortified them by artificial and natural means, they called this collection of houses a town or city, distinguished by temples and public square."¹⁸ In his *De Officiis* Cicero gives a description of the origin of the commonwealth which is similar to that advanced by Aristotle, namely, a result of the progressive expansion of the family.¹⁹

Lucretius (99-55 B. C.) was the main representative of the Epicurean school among the Romans. According to him, the earliest type of human life was extremely wild, rough and crude, but distinguished by the more elementary virtues of sympathy and admiration for strength and beauty. While wild and simple, this life was at least tolerable. With the growth of wealth on the part of the leaders, however, enmity and jealousy were aroused. A period of violence followed, which was only ended by a mutual compact on the part of the people to put an end to this strife and submit to a common authority.²⁰ Especially striking was Lucretius' account of cultural evolution through stone, copper and iron stages of development. While not so thorough-going an Epicurean as Lucretius, Horace held essentially the same views regarding the primitive state of human life. In fact, his description is so

¹⁷ A. J. Carlyle, *A History of Medieval Political Theory*, Vol. I, pp. 13-15.

¹⁸ Cicero, *De Republica* (Translation Yonge, Bohn), Book I, Chapters xxv-xxvi.

¹⁹ Cicero, *De Officiis* (Translation Edmunds, Bohn), Book I, Chapter xvii.

²⁰ Lucretius, *De Rerum Natura* (Translation Watson, Bohn), Book V, 838-1170.

similar that the earlier poet may have provided the model for the later.²¹

The doctrines of the Stoic Philosopher Seneca (3 B. C. to 65 A. D.) were among the most influential of Roman theories regarding the early conditions of mankind. He was the most notable Roman expositor of the theory of a primitive golden age from which mankind had subsequently declined. In the beginning, he held, man had lived without social distinctions and without coercive authority. Property in this age was held in common and the rule was based upon the spontaneous obedience to the wise by the remainder of the group. The origin of private property, however, broke down this period of primitive felicity, and the strife after wealth and position rendered political authority necessary to make the conditions of life tolerable.²²

The historian Tacitus had no particular theories of the origin of human society, but his method of turning to the Germanic tribes to get a picture of a life which seemed to him much more "natural" and virtuous than the life in imperial Rome was one which became very popular in the eighteenth century, after the period of geographical discoveries had brought reports to the West of the existence of truly "natural" men in remote parts of the world.²³

In formulating a distinction between the *jus naturale* and the *jus gentium* the views of the Roman Lawyers of the imperial period seem to indicate a belief in the existence of a primitive state of nature like that pictured by Seneca. The *jus naturale* was apparently based upon usages common to the primitive stage, and the *jus gentium* on the practices which had developed after the growth of the conventional institutions of organized society. It is the opinion of Carlyle on this point that:

²¹ Cf. H. F. Osborn, *Men of the Old Stone Age*, Appendix IX, p. 504.

²² Seneca, *Epistularum Moralium* (Edited by Haase), XIV, 2,

²³ Tacitus, *Germania*, passim.

We may think therefore that the distinction made by Ulpian between the *jus naturale* and the *jus gentium* is really connected, though Ulpian may not have been fully conscious of the fact, with a tendency to conceive of some state of nature as lying behind the actual conditions of human life. . . . At least, whatever doubt we may continue to feel as to the true significance of Ulpian's distinction and definition, there can be little doubt that the tendency of legal theory was towards the distinction made between the primitive and conventional, of which we have spoken.²⁴

IV. THE MEDIEVAL VIEWS OF THE ORIGINAL STATE OF MAN

It is when we come to the views of the Patristic period that we first find the effect of Seneca's doctrine concerning the golden age of the primitive life of mankind. With the Fathers Seneca's notion of the primitive golden age was transformed into the conception of the condition of mankind before the fall. While there was a certain logical problem to solve in reconciling Seneca's conception of primitive social life with a condition in which there were but two individuals in existence, still the heroic exegesis of the Fathers, with their never-failing device of allegorical interpretation, was quite equal to the task. It was through the fall, as caused by the transgression of Adam, that man passed from the state of nature into the miseries of unorganized and unregulated life. Man was rescued from the evils of this state only by the establishment of political society and the acceptance of the revealed religion. This "Christian Anthropology" was very influential

²⁴ Carlyle, *op. cit.*, pp. 43-4.

in the Middle Ages, as it furnished the starting-point for most of the theological and political theories regarding the primitive state of mankind.²⁵

As a sort of transition between the conventional Patristic period and the ninth century, we find St. Isidore of Seville (d. 636), the Spanish encyclopedist. In his definition of "oppidum" in his weighty, but not very original, *Etymologies*, he says that, "men were originally naked and unarmed, defenceless against the inclemency of heat and cold, and the attacks of wild beasts and of all other men. At last they learned to make for themselves huts in which they might be sheltered and safe, and these were gradually collected in towns."²⁶ Thus Isidore combined the doctrines of Lucretius and Cicero. This conception, taken from classical writers, was handed over by Isidore to the later encyclopedists of the Middle Ages and was a very common starting-point for historical political theories. It is significant to note that he does not emphasize, though he does not deny, the conception of a primitive golden age.

In the political philosophy of the period of a revival of intellectual interests, generally known as the "Ninth Century Renaissance," there was little interest in the question of the original state of mankind. The theories which were held were of a second-hand sort gleaned from the earlier compendiums, notably from that edifying collection of Isidore mentioned above. Carlyle sums up this period, as regards its theories concerning the primitive state of man, as follows:

We find but little speculation or theory as to the beginnings of society and the State and what little there is, is obviously second hand and borrowed from earlier writers. In a treatise attributed to Alcuin, *De Rhetorica et Virtutibus* there is an interesting passage on the primitive conditions of human life, drawn as the author says, from ancient sources, in which man is represented as having origi-

²⁵ Ibid., pp. 117, 127.

²⁶ Ibid., p. 172, Isidore, *Etymologies*, XV, 2.

nally lived like the beasts, wandering about in the fields, without any rational or moral principle or rule of life. A great and wise man at last appears, and, recognizing the qualities and capacities of human nature, gathers men together into one place, and thus brings them to live a peaceful and humane life. We find a very similar statement of the primitive condition of man in Hrabanus Maurus' *De Universo*, taken from St. Isidore of Seville. . . .

In themselves, these statements are both too vague and too commonplace to enable us to fix very definitely the philosophic tradition to which they belong. We can hardly go further than this, that they represent a tradition which held that behind the period of the organized society of men there lay a time when there was no fixed order among mankind. It is a state of nature, but not, so far as these passages go, a good or ideal state, but rather one of disorder or misery. It would agree well enough with the conditions of human life as they might be pictured after sin and vice had come into the world, and before the great institutions, by which sin is controlled and checked had been developed.²⁷

Beginning with the tenth and eleventh centuries the Roman law began to be revived as a study, particularly a little later with the teaching of Irnerius at the University of Bologna in Italy. It made its way into northern Europe and exercised an enormous influence upon both legal and political institutions and theories. As regards the theory of this revived Roman law concerning the primitive state of man, all that can be said is that the writers held essentially to the views expressed by the writers of the *Digest* who have been mentioned above.²⁸

About this same time the Canon Law took a definite form in the *Decretum* of Gratian, which was published in 1142. The doctrine of the Canon Law was essentially similar to the Patristic views concerning the original state of man, namely, that there was a primitive golden age which corresponded to the state of man before the fall, and that this was followed by the period of violence incident upon Adam's transgression which rendered necessary

²⁷ Carlyle, *op. cit.*, pp. 211-12.

²⁸ Carlyle, *op. cit.*, Volume II, pp. 56-74.

government to establish order and enduring conditions of life. Says Carlyle on this point:

There is little direct reference in these Canonists to a primitive condition in which men lived without an organized social life, but there is enough to show us that they held the same view as that of the Fathers and such Stoics as Posidonius and Seneca, that behind the conventions of organized society there lay a time when men had lived without any ordered and definite social relations and without any coercive authority. Gratian says that while the natural law began with the creation of rational beings, the law of custom arose when men began to live together, when Cain built a city, and again when, after the Flood, and in the time of Nimrod, men began to be subject to each other. This passage is reproduced by Paucapalea, the first commentator on Gratian, in the introduction to his work, and Rufinus speaks of lordship as having begun with Nimrod, and having had its beginning in iniquity. This is the same view as that of the Fathers, who held that all men were originally free from the coercive control of their fellow-men, and trace the development of coercive government to the appearance of sin in the world.²⁹

The Scholastic social philosophy is perhaps best represented by Aquinas (1227-1274). He held, in harmony with the Aristotelian dogma of the natural sociability of man, that human society was the spontaneous product of man's inherent social instinct. Yet, owing to man's tendency towards evil unless restrained by authority, government was essential. This governmental authority, while rendered necessary by the demands of well-ordered social life, was nevertheless derived from God rather than based upon mere necessity.³⁰

In his *Defensor Pacis*, that brilliant adumbration of many later progressive political theories, Marsiglio of Padua (1270-1342) set forth his belief in a utilitarian basis of society. Society was essential to mankind for the carrying on of the coöperative activities so necessary to human

²⁹ Ibid., pp. 143-4.

³⁰ W. A. Dunning, *A History of Political Theories, Ancient and Medieval*, pp. 197-198. R. L. Poole, *Illustrations of the History of Medieval Thought*, pp. 242-246.

comfort, and even for the very existence of human life. But unregulated society was prone to descend into disorder, and, hence, the necessity of government to insure order and justice. He says in regard to this:

Moreover, since man is born unprotected from his environment and is thus liable to suffering and destruction, he needs arts of diverse sorts whereby he may ward off noxious things. And since such arts cannot be employed save by a number of men, nor preserved save through their communication from age to age, it was necessary for men to congregate in order to acquire what is useful and escape what is injurious.

Among men thus congregated, contention arises naturally, which, if not regulated by the rule of justice, leads to division and strife, and finally to a dissolution of the community. It is therefore necessary to introduce into the community the rule of justice, and to set up a guardian or protector.³¹

Aeneas Sylvius, who later became Pope Pius II (1458-64), held a belief in a state of nature which was to be found in the condition of mankind after the expulsion from the "Garden." After a period of bestial existence they came to perceive the value of social life, established social groups and cities, and invented the arts of life and pleasure. Scherger sums up his views as follows: "He believes in a state of nature in which men originally lived after the expulsion from Paradise, in the manner of wild beasts. Discovering that the society of their fellowmen conduced to good living, they assembled to form society, built homes, surrounded cities with walls and discovered the arts which heighten the value of life."³² Aeneas Sylvius also seems to have been the originator of the doctrine of the social, as distinguished from the governmental compact.

³¹ Marsiglio, *Defensor Pacis*, Book I, Chapter iv. Given in F. W. Coker, *Readings in Political Philosophy*, p. 161.

³² G. L. Scherger, *The Evolution of Modern Liberty*, p. 101. See also Dunning, *A History of Political Theories, Ancient and Medieval*, pp. 282-3.

V. THE STATE OF NATURE IN EARLY MODERN PHILOSOPHY

The general social philosophy of the period from the fifteenth to the seventeenth century was colored chiefly by two somewhat divergent backgrounds, the Christian Epic and the literature and philosophy of classical antiquity, which had been revived through the influence of the Humanists. Hence, we find in the views of the state of nature expressed in this period a combination of classical and Christian doctrines and frequent references to both Christian and pagan authorities.

Machiavelli's (1469-1527) discussion of the natural state of man was of an analytical and psychological nature rather than historical. It dealt with man's inherent characteristics, as viewed by Machiavelli, rather than with his condition in the most remote historic period. As far as Machiavelli attempted to deal with man's historic evolution he followed Polybius rather implicitly.³³

In the *Vindiciae contra Tyrannos*, the author (Hubert Languet or Duplessis-Mornay)³⁴ holds that men were "by nature free, impatient of servitude, and born rather to command than to obey." He follows Seneca and the Patristic writers in holding that in the golden age government was in the hands of the wise men, but, owing to the conflicts growing out of the struggle over private property,

³³ Machiavelli, *Discourses on the First Ten Books of Titus Livius*, Book I, Chapter ii. (Detmold's edition, Vol. II., pp. 99-101.

³⁴ Dunning, *A History of Political Theories from Luther to Montesquieu*, p. 47.

kings were chosen for their valor and diligence in order to suppress the struggles and confusion.³⁵ George Buchanan, another anti-monarchic writer of the time, in his *On the Sovereign Power among the Scots*, followed Polybius in his view of the natural state of man, in that he held that man in this period lived a rough animal-like existence without legal restrictions or any permanent habitation, but added a point, in that he claimed that not only self-interest but also the divinely implanted social instinct must be assumed to account for the final development of human society.³⁶

While Jean Bodin (1530-96) in his *Republic* does not develop the distinctive theory of a pre-social state of nature prevailing among mankind, nevertheless he makes an advance towards this type of doctrine by holding that the life of primitive man was wild and violent and that the social instinct, first extending only to members of a family, and then expanding to include wider groups, was the only agency which made primitive life tolerable and finally rescued man from this state of pristine confusion and violence. But while society thus originated in the social instinct, the state had its beginnings in force through the conquest of one group by another.³⁷ Bodin thus describes his impressions of the life of primitive men:

Yea reason and the very light of nature leadeth us to believe very force and violence to have given course and beginning unto commonwealths. And albeit that there were no reason therefor, it shall be hereafter declared by the undoubted testimonies of the most credible historiographers, that is to say of Thucydides, Plutarch, Caesar, and also by the laws of Solon: that the first men that bare rule had no greater honour and virtue that to kill, massacre, and rob men, or to bring them into slavery. These be the words of Plutarch. Yet have we more also, the witness of the sacred history, where it is said that Nimrod, the nephew of Shem was the first that

³⁵ Coker, op. cit., pp. 210-11.

³⁶ Dunning, op. cit., p. 57 and note.

³⁷ Dunning, op. cit., pp. 87-8.

by force and violence brought men into subjection, establishing his kingdom in the country of Assyria, and for this cause they called him a "mighty hunter" which the Hebrews interpret to be a thief and a robber.³⁸

In another portion of his treatise he goes on in the following manner:

"The first sort of men was most given to rapine, murder, and theft, delighting in nothing more, nor accounting any honour greater than to rob and kill, and to oppress the weaker sort as slaves."³⁹

He proceeds to cite Thucydides, Aristotle, and others regarding the alarming amount of robbery in historic Greece and mentions how Aristotle apparently classifies robbery as a legitimate occupation.

VI. THE STATE OF NATURE AS INTERPRETED BY THE SOCIAL CONTRACT SCHOOL AND OTHER WRITERS OF THE SEVENTEENTH AND EIGHTEENTH CENTURIES

At no previous time had the alleged conditions of man in his natural state possessed such practical importance for social thinking as they came to assume in the seventeenth and eighteenth centuries. It was necessary to justify the existence of political society, the national state, and secular absolutism. Therefore, the social philosophers turned to conditions in the natural state of man to find sufficient reasons for the necessity of the establishment of orderly political life. It was held that this natural condition of man was either intolerably miserable or, at best, inconvenient and unsafe. To escape from such a situation political society was established. The instrument by which it

³⁸ Bodin, *The Six Bookes of a Commonweale, done into English by Richard Knolles*, London, 1606, p. 47. (I have modernized the diction to some degree.)

³⁹ *Ibid.*, pp. 262-3.

was created was, in the opinion of most of the writers of the time, the social and governmental contracts. The growing importance of economic factors in society, as a result of the developing commercial revolution and the "intervention of capital," is evident in the frequent emphasis upon the relation of the rise of property to the necessity for political protection and in the usual enumeration of the right of possession as one of the "inalienable rights of man."

Richard Hooker (1552-1600), in his *Laws of an Ecclesiastical Polity*, moves in the direction of Hobbes in his description of the life of primitive man. He pictures the condition as anything but golden and gives thanks to the Lord that even though things are bad enough in his time, they are immensely better than in primitive days. He phrases his conception in the following words:

But neither that which we learn of ourselves nor that which others teach us can prevail where wickedness and malice have taken deep root. If, therefore, when there was as yet only one family in the world, no means of instruction, human or divine, could prevent the effusion of blood; how could it be chosen but that when families were multiplied and increased upon earth, after separation each providing for itself, envy, strife, contention, and violence must grow up amongst them? For hath not nature furnished man with wit and valor, as it were with armor, which may be used as well unto extreme evil as good? Yea, were they not used by the rest of the world unto evil; unto the contrary only by Seth, Enoch, and those few of the rest in that line? We all make complaint of the iniquity of our times; not unjustly, for the days are evil. But compare them with those times wherein there were not above eight righteous persons living upon the face of the earth, and we have surely good cause to think that God hath blessed us exceedingly, and hath made us behold most happy days.⁴⁰

If Hooker adumbrated Hobbes, so did a Spanish Jesuit writer foreshadow Rousseau's *Discourse on the Origin of Inequality among Men*.⁴¹ In his work *On Kingship and*

⁴⁰ Hooker, *The Laws of an Ecclesiastical Polity*, Book I, Chapter x, Par. 3.

the Education of a King, Mariana (1536-1624) describes a state of nature which was distinguished at first primarily by rude simplicity and contentment. This condition was, however, soon broken up by avarice, and the violence which resulted was only done away with through the submission of the group to political authority.⁴² Scherger has summed up Mariana's conception in the following manner:

He believes in a state of nature. In the beginning, he holds, men wandered about from place to place after the manner of wild animals, bound by no law, subject to no authority. Their number increasing, they seemed to represent the rude form of a people. They selected father or grandfather as leader. They lived in happiness and simplicity. There was no fraud, no falsehood, no inequality. But rabid avarice soon brought robbery, deception, and slaughter into this state. Crime went unpunished. To escape violence and discord, men agreed to bind themselves mutually by a compact, and began to look to an individual of superior qualities for justice and faith.⁴³

The doctrines of Hugo Grotius (1583-1645), the first great exponent of international law, concerning the state of nature are somewhat confusing. On the one hand, following the Stoics and Aristotle, he claims that man is by nature a social being and that man's natural state is, hence, a social one. On the other hand, he frequently falls back upon a pre-political state of nature which he "identifies with the age of Cyclopes and Autochthones of classic fable and with the patriarchal age of the Scriptures."⁴⁴ Professor Dunning thus sums up his main doctrines upon this subject:

At all events, while he declares the social life to be the "natural" condition of man, he as often recurs to the idea of an ante-political "state of nature", both as a logical concept and as an historical fact. This is the condition of man in which the pure law of nature rules,

⁴¹ A. Franck, *Reformateurs et Publicistes de l'Europe, dix-septième siècle*, pp. 52-3; 71-3.

⁴² Mariana, *op. cit.*, chap. i.

⁴³ Scherger, *op. cit.*, p. 115. Cf. Dunning, *A History of Political Theories from Luther to Montesquieu*, pp. 68-9.

⁴⁴ Dunning, *Ibid.*, p. 180, note.

with every individual as executor of his own rights under it; for "public tribunals are due not to nature but to the act of man." By nature everyone has a right to resist a wrong; but when civil society has been instituted for the preservation of public tranquility, this right becomes subject to the prescriptions of the sovereign. Against the sovereign the right of resistance is null, for the reason, among others, that those who instituted civil society deliberately willed their rights to the holder of supreme authority. It is indeed to be observed, Grotius says, in most explicit assertion of the contract theory, "that originally men, not by the command of God, but of their own accord, after learning by experience that isolated families could not secure themselves against violence, united in civil society, out of which act sprang governmental power."⁴⁵

Of the historic theories of the state of nature none has been more famous or more quoted than that of Thomas Hobbes (1588-1679). Hobbes made little attempt to discover the actual state of early man, as it might have been learned from reports of contemporary discoverers, but rather sought to deduce a philosophical conception from the assumed traits of human nature. The basic characteristic of man is "a general inclination, a perpetual and restless desire of power after power, that ceaseth only in death."⁴⁶ Men are natural enemies, for they potentially desire the attainment of the same ends or the possession of the same goods. Once in possession of goods, each man lives in continual fear lest he be despoiled by his fellows. Then, man's invariable pride and vain-glory make him jealous of his acquaintances. Hence, the natural state of man is one of the war of every man against every other man.⁴⁷ Such a condition is one of universal misery. "In such condition there is no place for industry; because the fruit thereof is uncertain; and consequently no culture of the earth; no navigation, nor use of commodities that may be imported by sea; no commodious buildings; no instru-

⁴⁵ Ibid., pp. 180-181.

⁴⁶ Hobbes, *Leviathan*, Chapter xi.

⁴⁷ Ibid., Chapters xii-xiii. Cf. *Philosophical Rudiments Concerning Government*, Chapter 1; and *De Corpore Politico*, Part I.

ments of moving, and removing, such things as require much force; no knowledge of the face of the earth; no account of time; no arts; no letters; no society; and what is worst of all, continual fear, and danger of violent death; and the life of man, solitary, poor, nasty, brutish, and short."⁴⁸ Hobbes is not insistent upon the historicity of this doctrine of the state of nature. If it is philosophically and logically sound that is all which concerns him. Yet, he contends that his view of man in the state of nature is not an historical impossibility, and cites the American Indians as an example of those who now live in such a condition.⁴⁹ From the miseries of the state of nature man has escaped through the instrumentality of a social contract, by which he agreed to live an orderly and peaceful life in civil society under an organized government.⁵⁰

John Milton (1608-74) in his *Tenure of Kings and Magistrates*, revived the old Patristic view which had been carried down through the Middle Ages and had received a new lease of life in the hands of the Monarchomachs, namely, that men were born free, equal, and in a state of primitive bliss, but, owing to Adam's transgression they had lost their original privileges, had descended into a state of promiscuous violence, and, to rescue themselves from this situation, were forced to establish a common and superior political authority:

No man, who knows aught, can be so stupid as to deny that all men naturally were born free, being the image and resemblance of God himself, and were by privilege above all creatures, born to command and not to obey. And that they lived so, till from the root of Adam's transgression falling among themselves to do wrong and violence, and foreseeing that such courses must needs tend to the destruction of them all, they agreed by common league to bind each other from mutual injury, and jointly to defend themselves against

⁴⁸ *Leviathan*, Chapter xiii.

⁴⁹ *Ibid.*

⁵⁰ *Ibid.*, Chapter xvii.

any that gave disturbance or opposition to such agreement. Hence came cities, towns, and commonwealths.⁵¹

In his *Tractatus Theologico-Politicus*, published in 1670, Spinoza develops his doctrines concerning the state of nature and its implications. Spinoza's main dogmas are as follows: Natural right is identical with power—in other words, in the state of nature, “might makes right.” Desire is as legitimate a guide as reason in the state of nature. Whatever a man desires in a state of nature he has a right to obtain and to use any means whatsoever to secure the object of his desire. Nevertheless, it is far better to live by reason than by desire, for only through the guidance of reason is a social life with all its benefits possible, and man who lives in an isolated state and guided by mere instinct must pass a most miserable existence. Therefore, men found it very advisable to join together in a civil society to secure the advantages of a well-ordered social life. A few of the more pertinent parts of Spinoza's treatment are the following:

By the right and ordinance of nature, I mean merely those natural laws wherewith we conceive every individual to be conditioned by nature, so as to live and act in a given way. For instance, fishes are naturally conditioned for swimming, and the greater for devouring the less; therefore, fishes enjoy the water and the greater devour the less by sovereign natural right. . . . Wherefore among men, so long as they are considered as living under the sway of nature, he who does not yet know reason or who has not yet acquired the habit of virtue, acts solely according to the laws of his desire with as sovereign a right as he who orders his whole life entirely by the laws of reason. . . . The natural right of the individual man is thus determined, not by sound reason, but by desire and power.

Whatsoever, therefore, an individual, considered as under the sway of nature, thinks useful for himself, whether led by sound reason or impelled by the passions, that he has a sovereign right to seek and take for himself as best he can, whether by force, cunning,

⁵¹ Milton, *The Tenure of Kings and Magistrates* (1649), given in Coker, op. cit., p. 281.

entreaty, or by any other means; consequently, he may regard as an enemy anyone who hinders the accomplishment of his purpose.

Nevertheless, no one can doubt that it is much better for us to live according to the laws and assured dictates of reason, for, as we have said, they have men's true good for their object. Moreover, everyone wishes to live as far as possible securely beyond the reach of fear, and this would be quite impossible so long as everyone did everything he liked, and reason's claim was lowered to a par with those of hatred and anger. There is no one who is not ill at ease in the midst of enmity, hatred, anger, and deceit, and who does not seek to avoid them as much as he can. When we reflect that men without mutual help, or the aid of reason, must live miserably, as we clearly proved, we shall plainly see that men must necessarily come to an agreement to live together as securely and well as possible if they are to enjoy as a whole the rights which naturally belong to them as individuals.⁵²

The eminent German publicist and social philosopher of the seventeenth century, Samuel Pufendorf (1632-94) presented an elaborate study of the state of nature. He developed two somewhat different treatments, one philosophical and the other historical. The state of nature, as a philosophical concept, is the condition in which "we may conceive man to be placed by his bare nativity, abstracting from him all the rules and institutions, whether of human invention, or of the suggestion and revelation of Heaven."⁵³ The following is Pufendorf's famous statement of the natural state of man as philosophically reconstructed:

Let us suppose a man bred up by another, just so far as to be able to walk, and without hearing a word spoken, insomuch that he shall be destitute of all instruction and discipline, and enjoying no knowledge, but such as sprouts naturally from the soil of his mind, without the benefit of cultivation; let us suppose the same man to be left in a wilderness or desert, and entirely deprived of the company and assistance of others; what a wretched creature

⁵² Spinoza, *A Theologico-Political Treatise* (Bohn), Chapter xvi. See also, *Ibid.*, Chapter v; also *A Political Treatise*, Chapter ii. Something of Spinoza's contemporary obscurity may be gleaned from the statement of Pufendorf that his authorship of the work which Pufendorf criticized could not be determined with certainty.

⁵³ Pufendorf, *The Law of Nature and of Nations*, Book II, Chapter ii, Section 1.

should we at last behold! A mute and ignoble animal, master of no powers or capacities, any further than to pluck up the herbs and roots that grow about him; to gather the fruits which he did not plant; to quench his thirst at the first river, or fountain, or ditch that he finds out in his way; to creep into a cave for shelter from the injuries of weather, or to cover over his body with moss or grass and leaves. Thus would he pass a heavy life in most tedious idleness; would tremble at every noise and be scared at the approach of his fellow creatures, till at last his miserable days were concluded by the extremity of hunger, or of thirst, or by the fury of a ravenous beast. That mankind therefore do not pass their life in a more forlorn and a more deplorable condition than any other living thing, is owing to their union and conjunction, to their intercourse with the other partners and companions of their nature. The Divine saying, "Tis not good for Man to be alone," is not to be restrained to matrimony, but seems to belong in general to any society with other men. But now without law, it is impossible that any society should be either introduced or maintained in strength and quietness. And consequently, unless man had been designed for the basest and the most wretched part of the animal creation it was not by any means convenient that he should live loose from all direction and obligation of law.⁵⁴

This philosophical view of the natural state of man Pufendorf admits is not confirmed by historic observation. "We are ready," he says, "to acknowledge it for a certain truth that all mankind did never exist together in a mere natural state."⁵⁵ This is evident from the scriptures, for Eve was subject to Adam, and their children were subject to both. The closest actual historic approach to a state of nature came when these early men began to break away from their paternal households and establish separate homes. The smaller these family groups were, the nearer they approached to the pure state of nature where men lived singly and without authority. There was authority within these family groups, but they lived in a state of nature with respect to each other, for they recognized no

⁵⁴ Pufendorf, *op. cit.*, Book II, Chap. i, Section 8, p. 101.

⁵⁵ *Ibid.*, Section 3.

common superior. Yet, even these independent communities enjoyed social contacts and coöperation, and knew nothing of the misery which must have existed in a state of pure isolation. Primitive patriarchal society, was therefore, the closest historic approximation to the philosophical characteristics of the state of nature attained by man.⁶⁶

John Locke's (1632-1704) conception of the state of nature approached that of Pufendorf, as viewed in the historic sense of the latter's two-fold conception, though Locke was more consistent than Pufendorf in maintaining that such a state was historic and not a state of war but of peace. To Locke, the state of nature was rather pre-political than pre-social. Men had from the beginning lived in families and small social groups. The state of nature was one of liberty and equality, but was not one of "license." There was, according to Locke, no necessary connection between the state of nature and that of war. The state of nature is a condition in which man is without a political superior; the state of war is one where a man uses force against his neighbor without cause or right, and this may happen in civil society as well as in a state of nature. The three main characteristics of a civil society which differentiate it from the state of nature are: the union into one body, a common law, and an authority to decide controversies and punish offenders. The chief inconvenience of the state of nature was the lack of an impartial judge to administer the law of nature, by which all were bound, and the execution of which lay in the hands of each individual. Therefore, to give better security to their property, men decided to unite into a civil society and to give up to a common superior authority (i. e., to themselves acting in a sovereign capacity through their delegates) their individual right of adminis-

⁶⁶ Ibid.

tering the law of nature. Among the more important of Locke's descriptions of the state of nature are these:

But though this (the state of nature) be a state of liberty, yet it is not a state of license. . . . Every one as he is bound to preserve himself, and not to quit his station willfully, so by like reason, when his own preservation comes not into competition, ought he as much as he can to preserve the rest of mankind, and not unless it be to do justice to an offender, take away, or impair the life, or what tends to the preservation of the life, the liberty, health, limbs or goods of another.⁵⁷

And here we have the plain difference between the state of Nature and the state of war, which, however, some men have confounded, are as far distant as a state of peace, good-will, mutual assistance, and preservation; and a state of enmity, malice, violence, and mutual destruction are one from another. Men living together according to reason without a common superior on earth, with authority to judge between them, is properly the state of Nature. But force, or a declared design of force upon the person of another, where there is no common superior on earth to appeal to for relief, is the state of war.⁵⁸

God having made man such a creature, that in His own judgment, it was not good for him to be alone, put him under strong obligations of necessity, convenience, and inclination, to drive him into society, as well as fitted him with understanding and language to continue and enjoy it. The first society was between man and wife, which gave beginning to that between parents and children, to which, in time, that between master and servant came to be added. And though these might, and commonly did, meet together and make up but one family, wherein the master or mistress of it had some sort of rule proper to a family, each of these, or all together, came short of a "political society"; as we shall see if we consider the different ends, ties, and bounds of each of these.⁵⁹

The French apologist of monarchy, Bossuet (1627-1704), in his *Politics as Derived from the Very Words of the Holy Scriptures*, and his *Discourse on Universal History*, conceived of a state of nature prior to civil society which bore many points of resemblance to that as pictured

⁵⁷ Locke, *Two Treatises of Government*, II, Chapter ii, Section 6.

⁵⁸ *Ibid.*, Chapter iii, Section 19.

⁵⁹ *Ibid.*, Chapter vii, Sections 77-78.

by Lucretius. The following is, perhaps, the best summary of Bossuet's view of the development of man from savagery:

To begin with, there have always been evidences of the origins of things, not merely in the earliest times, but also in far later periods. In reviewing this development one beholds laws being established, customs being refined and empires being created. The human race generally emerges from ignorance, is taught by experience, and invents and perfects the arts of life. Just in proportion as the numbers of men increase, the earth is populated from place to place. Men cross mountains and ravines; they traverse rivers and seas and settle new homes. The land, which was in the beginning nothing but a vast forest, became transformed. The levelled forests gave way to open fields, to pasture lands, to hamlets, to straggling villages, and, finally, to cities. Mankind then learned how to capture certain types of animals, and to domesticate some and adapt them to their use. At first men invented weapons, which man later turned against his own species. Nimrod, the first warrior and conqueror of history, is also called in the Scriptures a mighty hunter. Along with the animals man learned how to utilize fruits and vegetables. He further adapted metals to his service, and ultimately made all nature serve him.⁶⁰

Vico (1668-1744), the original Italian writer on history and jurisprudence, had rather a novel opinion concerning the original condition of mankind. Vico held that the natural state of mankind was a social condition and that any non-social condition was a fall or deviation from this natural social condition. He had two theories of the life of primitive man, differentiated as to whether he was discussing the Hebrews or the Gentiles. In both cases, they originated in the same Paradise, and the same Fall and Deluge cursed both. That is to say both were descendants

⁶⁰ Bossuet, *Discours sur l'histoire universelle*. Janet has summarized his conception as follows: "Bossuet admet, comme Hobbes, une sorte d'état de nature antérieure au gouvernement civil, où tout était en proie à tous." "Où tout le monde veut faire ce qu'il veut, nul ne fait ce qu'il veut; out tout le monde esta maître, tout le monde est esclave." Dans cet état, il est bon que chacun renounce à sa propre volonté et la transmette au gouvernement. Ainsi tout le force est dans le magistrat souverain, et chacun l'affermat au préjudice de la sienne propre. On voit ici que Bossuet donne au gouvernement la même origine que Hobbes lui-même, le besoin d'une force souveraine qui résume et accable toutes les forces particuliers." P. Janet, *Histoire de la science politique*, Volume II, p. 278.

of Adam. After the Flood, however, there was a differentiation. The Hebrews continued their development, never passing through a period of barbarism. The other, or Gentile nations, however, were plunged into the most wretched savagery after the Deluge and were rescued from this condition and brought into society only by the medium of a religious consciousness aroused by the common response to the terrors of nature.⁶¹ Flint has summed his doctrines as follows in regard to the Gentile nations after the Flood:

He imagined them to have lost the use of all the higher faculties characteristic of man; to have ceased to have any religious notions; to have become incapable of speech; to have taken to walk on all fours as frequently as on their legs; to have retained, however, their animal instincts and passions, and even, for reasons which are given, but which would be unprofitable to repeat, to have increased notably in bodily size and strength. Vico's giants, whom he identifies, of course, with the giants of the book of Genesis, the Cyclops of Homer, and the Titans of Greek mythology, are the descendants of men, but rather beasts than men, being not even distinguished from other animals by an habitually erect posture and bipedal progression, enormously strong, hairy, filthy, ferocious, solitary, speechless, godless, with no sense of duty, without bonds of marriage, not burying their dead. . . . The description of them and even of their surroundings—for they are supposed to have lived during a diluvial period among woods and marshes—closely resembles that given of primitive men by many modern ethnologists.⁶²

As the diluvial earth dried up there were violent thunder storms, the terrors of which worked a mighty change in the minds of some of the giants, causing them to regard the heavens as angry, to feel that there was a supernatural power above them, and to take refuge, male and female, in caves and grottoes. The consciousness of a divine presence was accompanied by a sense of shame, which checked brutal lust, and led to the formation of families. Society had thus for its constitutive principle religion. No other principle, it seemed to Vico, could reasonably be deemed sufficiently powerful to subdue savage men and to unite them into a social group. There

⁶¹ R. Flint, *Vico*, pp. 200-204.

⁶² Flint, *op. cit.*, p. 202.

could, he thought, be no tribes, no societies, without religion, and religion he supposed to have been occasioned, so far as it was of heathen origin, by terror.⁴³

In his stress upon religion as a socializing force, Vico has points of resemblance to Hegel and Benjamin Kidd.

The celebrated French philosopher, Montesquieu (1694-1778), took a view of the state of nature which varied widely from the conception held by Hobbes and those who represented natural man as a warlike and fierce being. Montesquieu pictures primitive man as a timid creature, frightened by the rude aspects of nature and guided only by the elementary instincts of self-preservation and reproduction. He held that the common response of primitive men to their mutual fear of the manifestations of natural phenomena would incline them to social life, and that, in due time, this social life would have a stronger bond than instinct in the desire which man would acquire to live in society, once he had perceived its advantages. But, when social life becomes well-established, men lose the feeling of weakness which originally impelled them to society and originate a state of war. With Montesquieu, the state of war, thus, is not a phenomenon of the state of nature but of civil society.⁴⁴ He says in part:

Man in a state of nature would have the faculty of knowing before he had acquired any knowledge. Plain it is that his first ideas would not be of a speculative nature; he would think of the preservation of his being before he would investigate its origin. Such a man would feel nothing in himself at first but impotency and weakness; his fears and apprehensions would be excessive; as appears from instances of savages found in forests, trembling at the motion of a leaf, and flying from every shadow.

In this state, every man, instead of being sensible of his equality, would fancy himself inferior. There would, therefore, be no danger of their attacking one another; peace would be the first law of nature.

⁴³ Ibid., p. 206.

⁴⁴ Montesquieu, *The Spirit of Laws*, Book I, Chapter ii.

The natural impulse or desire which Hobbes attributes to mankind of subduing one another is far from being well-founded. The idea of empire and dominion is so complex and depends upon so many other notions that it could never be the first which occurred to the human understanding.

Hobbes enquires, "For what reason go men armed, and have locks and keys to fasten their doors, if they be not naturally in a state of war?" But is it not obvious that he attributes to mankind before the establishment of society what can happen but in consequence of this establishment, which furnishes them with motives for hostile attacks and self-defence?

Next to a sense of his weakness, man would soon find that of his wants. Hence, another law of nature would prompt him to seek for nourishment.

Fear, I have observed, would induce men to shun one another, but the marks of this fear being reciprocal, would soon engage them to associate. Besides, this association would quickly follow from the very pleasure one animal feels at the approach of another of the same species. Again, the attraction arising from the difference of sexes would enhance this pleasure, and the natural inclination they have for each other would form a third law.

Besides the sense of instinct which man possesses in common with brutes, he has the advantage of acquired knowledge; and thence arises a second tie, which brutes have not. Mankind have therefore a new motive of uniting; and a fourth law of nature results from the desire of living in society.⁸⁸

Montesquieu, as probably the greatest advocate of the method of observation in politics that had so far appeared, manifests an attitude towards the natural man which was characteristic of his time. The results of overseas discoveries were becoming known to European thinkers, and they became acquainted with the strange "men of nature" found in both worlds. Men now paid little attention to the attempt to locate the natural man back in antiquity, but searched for him in the description of travellers. It was thought that there were survivals of the natural men still living in the woods, not only of remote countries, but even

⁸⁸ Montesquieu, *op. cit.*, Book I, Chapter ii.

of Europe, and if one of these could only be located, men could at last behold the object of age-long curiosity. Professor Haddon in his *History of Anthropology*, in discussing the work of Blumenbach, describes the most interesting example of this belief of the times and its final overthrow in the field of scientific thought. He says:

Within the species "Homo sapiens" Linnaeus included wild or natural man, "Homo sapiens ferus," whose existence was widely believed in at the time. The most authentic case was that of "Wild Peter," the naked brown boy discovered in 1724 in Hanover. He could not speak, and showed savage and brutish habits and only a feeble degree of intelligence. He was sent to London, and, under the charge of Dr. Arbuthnot, became a noted personage, and a subject of keen discussion among philosophers and naturalists. One of his admirers, more enthusiastic than the others, declared that his discovery was more important than that of Uranus, or the discovery of thirty thousand new stars.

Blumenbach alone, apparently took the trouble to investigate the origin of "Wild Peter," and in the article he wrote on the subject disposed for all time of the belief in the existence of "natural man." He pointed out that when Peter was first met he wore fastened around his neck the torn fragments of a shirt and that the whiteness of his thighs, as compared with the brown of his legs showed that he had been wearing breeches and no stockings. He finally proved that Peter was the dumb child of a widower who had been thrust out of his home by a new step-mother.⁶⁶

David Hume (1711-1776) had no patience with any such conception as that of a state of nature prior to society, unless it be admitted that it was a mere creation of philosophical imagination constructed for the pleasure of analysis in a metaphysical sense. He held that the very characteristics and needs of human nature would make men social from the beginning, and that the philosophical conception of a pre-social state of nature was not different, as regards remoteness from reality, from the golden age as painted by

⁶⁶ A. C. Haddon, *History of Anthropology*, pp. 27-8. Cf. Myres, "The Influence of Anthropology on the Course of Political Science," in *Publications of the University of California*, 1916.

the poets. The only difference between the two concepts was that the former described a mythical age of war; the latter a hypothetical condition of primitive bliss. Hume expresses himself upon this point in the following language:

We may conclude that it is utterly impossible for men to remain any considerable time in that savage condition, which precedes society; but that his very first state and situation may justly be esteemed social. This, however, hinders not but that the philosophers may, if they please, extend their reasoning to the supposed *state of nature*; provided they allow it to be a mere philosophical fiction, which never had, and never could have any reality. . . .

This *state of nature*, therefore, is to be regarded as a mere fiction, not unlike that of the *golden age*, which poets have invented; only with this difference, that the former is described as full of war, violence, and injustice; whereas the latter is painted out to us, as the most charming and most peaceable condition, that can possibly be imagined.⁶⁷

As was usually the case in regard to most of his opinions upon philosophical subjects, Rousseau (1712-1778) showed considerable inconsistency in his doctrine of the state of nature. In his earliest treatment of the subject in the *Discourse on the Origin and Foundation of the Inequality among Mankind*, he represents man in the state of nature as a free and easy-going savage, guided by instinct, free from cares and worries, and concerned merely with his own welfare. It was a blissful age of the purest savagery, devoid of any of the contaminations of civilization. With the exception of that short period, centering about the origin of society and the industrial arts before inequality and private property had become permanently established, this natural state of man is represented to be the happiest of all the periods of human existence.⁶⁸ In his *Emile*, Rousseau attempts to discover the natural man by hypothetically

⁶⁷ Hume, *A Treatise of Human Nature* (Green and Gross), Vol. II, pp. 265-6.

⁶⁸ Rousseau, *Discourse on the Origin and Foundation of Inequality among Mankind* (Trans. G. D. H. Cole), especially pp. 194-203; 214-217.

removing from him all the additions that can be ascribed to the effect of society and its institutions. Taine has given the following graphic summary of his attitude towards natural man as put forward in the *Emile*:

Dépouillez- le (civilized man) par la pensée, de ses habitudes factices, de ses besoins surajoutés, de ses préjugés faux; écartez les systemes, rentrez dans votre propre coeur, écoutez le sentiment intime, laissez-vous guider par la lumière de l'instinct et de la conscience; et vous retrouverez cet Adam primitif, semblable à une statue de marbre incorruptible qui, tombée dans un marais, a disparu depuis longtemps sous une croûte de mousissures et de vase, mais qui, délivrée de sa gaine fangeuse, peut remonter sur son piédestal avec toute la perfection de sa forme et toute la pureté de sa blancheur.⁶⁹

Nevertheless, in his *Social Contract*, Rousseau represents the natural state of man as being essentially barbarous and unsafe, "so that the human race would perish unless it changed the manner of its existence."⁷⁰ In fact, it is only by entering civil society that man really becomes human and gains that power of self-control which is the only true liberty.⁷¹

A few of the more pertinent of Rousseau's different descriptions of the state of nature appear below:

Let us conclude, then, that man in a state of nature, wandering up and down the forests, without industry, without speech, and without home, an equal stranger to war and to all ties, neither standing in need of his fellow-creatures nor having any desire to hurt them, and perhaps even not distinguishing them from one another; let us conclude that, being self-sufficient and subject to so few passions, he could have no feelings or knowledge but such as befitted his situation; that he felt only his actual necessities, and disregarded everything he did not think himself immediately concerned to notice, and that his understanding made no greater progress than his vanity. If by accident he made any discovery, he was the less able to communicate it to others, as he did not know even his own children. Every art would necessarily perish with its inventor, where there

⁶⁹ H. Taine, *L'Ancien Régime*, Part IV. Compare with Pufendorf's "meer state of nature."

⁷⁰ Rousseau, *The Social Contract* (Trans. Cole), Chapter vi, p. 14.

⁷¹ *Ibid.*, Chapter viii, pp. 18-19.

was no kind of education among men, and generations succeeded generations without the least advance; when, all setting out from the same point, centuries must have elapsed in the barbarism of the first ages; when the race was already old, and man remained a child.⁷²

Contrast the above with the following selections from the *Social Contract*:

I suppose men to have reached the point at which the obstacles in the way of their preservation in the state of nature show their power of resistance to be greater than the resources at the disposal of each individual for his maintenance in that state. The primitive condition can then subsist no longer; and the human race would perish unless it changes its manner of existence.⁷³

The passage from the state of nature to the civil state produces a very remarkable change in man, by substituting justice for instinct in his conduct, and giving his actions the morality they had formerly lacked. Then only, when the voice of duty takes the place of physical impulses and the right of appetite, does man, who so far had considered only himself, find that he is forced to act on different principles, and to consult his reason before listening to his inclinations. Although in this state he deprives himself of some advantages which he got from nature, he gains in return others so great, his faculties are so stimulated and developed, his ideas so extended, his feelings so ennobled, and his whole soul so uplifted, that, did not the abuses of this new condition often degrade him below that which he left, he would be bound to bless continually the happy moment which took him from it forever, and instead of a stupid and unimaginative animal, made him an intelligent being and a man.⁷⁴

Blackstone (1723-80), in his *Commentaries on the Laws of England*, expressly denies the existence of a pre-social state of nature and holds that the patriarchal family furnished the first basis of society. The patriarchal families grew and subdivided and in time became reunited into civil societies through "compulsion," "conquest," or "compact." He concludes that:

The only true and natural foundations of society are the wants and fears of individuals. Not that we can believe with some theo-

⁷² Rousseau, *Discourse on the Origin of Inequality*, p. 203.

⁷³ *Social Contract*, p. 14.

⁷⁴ *Ibid.*, pp. 18-19.

retical writers that there ever was a time when there was no such thing as society, either natural or civil; and that, from the impulse of reason, and through a sense of their wants and weaknesses, individuals met together in a large plain, entered into a social contract, and chose the tallest man present to be their governor. This notion of an actually existing unconnected state of nature is too wild to be seriously considered: and besides it is plainly contradictory to the revealed accounts of the primitive origin of mankind, and their preservation two thousand years afterwards; both of which were effected by the means of single families. These formed the first natural society among themselves, which, everyday extending its limits, laid the first, though imperfect rudiments of civil or political society: and when it grew too large to subsist with convenience in that pastoral state, wherein the patriarchs appear to have lived, it necessarily subdivided itself by various migrations into more. Afterwards, as agriculture increased, which employs and can maintain a much greater number of hands, migrations became less frequent, and various tribes which had formerly separated, reunited again, sometimes by compulsion and conquest, and sometimes, perhaps, by compact.⁷⁵

The group of French thinkers known variously as the *Physiocrats* or *Economistes* represent a view of the meaning of the word "natural" which in the third quarter of the eighteenth century was beginning to have a very considerable vogue. By the term "natural" they meant the normal and perfect rather than the original or primitive, which had been the usual connotation of the term down to this time. They believed in the existence of a natural order in the universe which had been revealed by Newton and his fellow-scientists; all that conformed to this was perfect and destined to succeed, while all that deviated from it was evil and abnormal, just in proportion as it departed from the line of procedure marked out by the natural order of things. According to this conception it was preposterous to advise a return to the primitive order to reach an ideal condition; all that was necessary was to

⁷⁵ Blackstone, *Commentaries on the Laws of England* (Edited by Cooley), Volume I, pp. 46-7.

discover the laws of the cosmic process and conform one's actions to them. Hence, to them, the state of nature meant a state of full and complete development and not a rude, primitive, or undeveloped condition.⁷⁶

One of the earliest and best applications of this Physiocratic doctrine to the natural state of man, viewed in the historic and analytical sense, was made by the Scotch writer Adam Ferguson (1723-1816) in his *Essay on the History of Civil Society*.⁷⁷ This book has been sadly neglected, but it was unquestionably the most profound and accurate study of social evolution made in the eighteenth century—one which quite dwarfs Montesquieu's attempt from the standpoint of philosophic insight and historic accuracy in dealing with the fundamental problems of social development.⁷⁸ In this respect, it was probably only approximately matched by Turgot's famous *Discourses* at the Sorbonne. The chief reflections made by Ferguson on the state of nature may be summed up as follows: Many have foolishly considered man as being in the beginning different in kind from what he is at present and have either pictured him as a mere beast or as excessively warlike. The natural historian in treating all other members of the animal kingdom goes out and collects concrete observations of actual conditions; when he comes to man, however, he thinks that he must substitute "hypothesis instead of reality, and confounds the provinces of imagination and reason, of poetry and science." If we want to know about man we must study him as we actually find him at present in the varied conditions of development;

⁷⁶ H. Higgs, *The Physiocrats*, p. 70. Gide and Rist, *Histoire des Doctrines Economiques*, pp. 7-8.

⁷⁷ Of course, we refer merely to his doctrine of the natural as the normal and as tending towards perfection; otherwise, there was a great difference as his doctrine was dynamic and progressive, that of the Physiocrats static and retrospective.

⁷⁸ Stein, *Über die Sociale Frage*. See also Janet, *op. cit.*, Volume II, p. 564. For an opposite view see L. Stephen, *English Thought in Eighteenth Century*, Volume II.

and if we want to know his real characteristics the thing to do is to study him under normal conditions and not in any unnatural or forced circumstances. Hence, even if we could catch a wild man in the woods, he would be no criterion by which to judge of the natural condition of mankind, but would be at the opposite pole from a natural human being. Ferguson reflects the theological anthropology and psychology of his time by stating that man is different in kind from all other animals and, hence, that nothing of his real characteristics can be discovered from studying the habits of animals. Art is not to be separated from nature, for art seems to be practically the most natural characteristic of man, who is continually endeavoring artificially to improve his material conditions. The state of nature may be discovered wherever man is living naturally according to his surroundings, as much in Great Britain as at the Cape of Good Hope or the Straits of Magellan. Just because man has begun to improve is no reason to hold that he has left the state of nature; rather, the more progress he makes the more natural he may be assumed to have become. The terms "natural" and "unnatural" as applied to human conduct are misnomers. All of the acts of man are natural. Really pertinent questions would be what is just or unjust, what is happy or wretched, what conditions are favorable or unfavorable to the development of the better nature of mankind.⁷⁹ On the whole, Ferguson was one of the first writers to anticipate the modern anthropological tendency to minimize the difference between primitive and modern man.

Just what Edmund Burke (1729-97) thought about the state of nature is rather difficult to determine, for his work on that subject, *A Vindication of Natural Society*, was in the nature of an ironical satire upon the thinkers of the

⁷⁹ Ferguson, *An Essay on the History of Civil Society*, Part I, Section i. As all of Ferguson's chapter on the state of nature is almost equally pertinent and yet far too long to quote, any direct citation from his work will be omitted.

school of nature, particularly of the Rousseauan variety. Burke first pictures the evils of the state of nature, and then proceeds to show that the establishment of political society only increased the misery. He points out how, in regard to external relations, political society has inflicted man with countless wars, and how, internally considered, political society has ground man down with the worst type of Machiavellian oppression. All forms of government are more or less despotic and their evils far outnumber the good they are able to bestow. Finally, political society not only brings political oppression but also economic tyranny and the unequal distribution of wealth.⁸⁰ The whole presentation is intended as a *reductio ad absurdum*, and, while it succeeds fairly well, still one may legitimately ask with Professor Rogers if Burke "does not dismiss too easily the vision he has conjured up."⁸¹ Burke's description of the state of nature is the rather common one of the nature school, and runs as follows:

In the state of nature, without question, mankind was subjected to many and great inconveniences. Want of union, want of mutual assistance, want of a common arbitrator to resort to in their differences. These were evils which they could not but have felt pretty severely on many occasions. The original children of the earth lived with their brethren of the other kinds in much equality. Their diet must have been confined almost wholly to the vegetable kind; and the same tree, which in its flourishing state produced them berries, in its decay gave them an habitation. The mutual desire of the sexes uniting their bodies and affections, and the children which are the results of these intercourses, introduced first the notion of society, and taught its conveniences. This society founded on natural appetites and instincts, and not on any positive institution, I shall call natural society.⁸²

While Burke was no apologist for, but rather a fierce critic of, the view that this condition was the best in man's

⁸⁰ Burke, *A Vindication of Natural Society* (Works, London, 1852), Volume II, pp. 520-551.

⁸¹ A. K. Rogers, "Burke's Social Philosophy," *American Journal of Sociology*, July, 1912, pp. 71-2.

⁸² Burke, *op. cit.*, pp. 520-21.

experience, still it seems reasonable to suppose that the above selection does not come far from presenting his real views regarding its concrete nature.

Thomas Paine (1737-1809) in his *Common Sense* gives the familiar summary of social evolution which represents man as originally sociable, owing to the advantages of mutual aid, but without political control. This tends towards that condition of anarchy which renders the establishment of government a necessity for the restoration of order:

In order to gain a clear and just idea of the design and end of government, let us suppose a small number of persons settled in some sequestered part of the earth, unconnected with the rest; they will then represent the first peopling of any country, or of the world. In this state of natural liberty, society will be their first thought. A thousand motives will excite them thereto; the strength of one man is so unequal to his wants, and his mind so unfitted for perpetual solitude, that he is soon obliged to seek assistance and relief of another, who in turn, requires the same. Four or five united might be able to raise a tolerable dwelling in the midst of a wilderness, but one man might labor out the common period of life without accomplishing anything; when he had felled his timber he could not remove it, nor erect after it was removed; hunger in the mean time would urge him to quit his work, and every different want would call him a different way. Disease, nay even misfortune, would be death; for though neither might be mortal, yet either would disable him from living, and reduce him to a state in which he might rather perish than to die.

Thus, necessity, like a gravitating power, would soon form our newly arrived emigrants into society, the reciprocal blessings of which would supersede, and render the obligations of law and government unnecessary while they remained perfectly just to each other; but as nothing but Heaven is impregnable to vice, it will unavoidably happen that in proportion as they surmount the first difficulties of emigration, which bound them together in a common cause, they will begin to relax in their duty and attachment to each other: and this remissness will point out the necessity of estab-

lishing some form of government to supply the defect of moral virtue.⁸³

Immanuel Kant (1724-1804) in considering the natural state of man, took practically the same ground as Hobbes. He held that men in an unregulated state of nature were in a state of violence and misery because of the anti-social and egoistic impulses of human nature. The only way to escape this was to establish civil society through a contract, which was inviolable, when once agreed to. The only difference between his views and those of Hobbes was that Kant was even more inclined to view the state of nature and the social contract as philosophical hypotheses than as concrete historical realities.⁸⁴

Jeremy Bentham (1748-1832) has received considerable credit for his distinction between natural and political society, but it seems that all that is new in his conception is the elaborateness of his analysis. He asserts that the criterion for differentiating between the two states is the presence of the habit of obedience to a superior authority in the case of political society, and the absence of such a habit in a natural society:

The idea of a natural society is a *negative one*. The idea of a political society is a *positive one*. 'Tis with the latter, therefore, we should begin.

When a number of person (whom we may style subjects) are supposed to be in the *habit* of paying *obedience* to a person, or an assemblage of persons, of a known and certain description (whom we may call *governor* or *governors*) such persons altogether (*subjects* and *governors*) are said to be in a state of *political society*.

The idea of a *natural society*, is, as we have said, a *negative one*. When a number of persons are supposed to be in the habit of *conversing* with each other, at the same time that they are not in any such habit as mentioned above, they are said to be in a state of *natural society*.⁸⁵

⁸³ Paine, *Common Sense*, Given in Coker, op. cit., p. 523.

⁸⁴ F. Paulsen, *Immanuel Kant*, pp. 349-53. Kant, *On the Common Saying* (Ed. by Hastie as *The Principles of Political Right*), pp. 46-55.

⁸⁵ Bentham, *A Fragment on Government*, Chapter I, Paragraphs x-xi.

This conception had been common in substance through the ages. What Bentham did was to give it more definite statement and qualification, and to analyze the meaning of the differentiation with greater acuteness than any predecessor.

Bentham may be taken as representative of the utilitarian philosophers whose work culminated in John Stuart Mill, and who based the justification of government upon the material advantages conferred by it. It was during their decline that the modern evolutionary viewpoint sprang up, and with a review of the chief doctrines of the sociologists of the evolutionary school and their anthropological critics, regarding the natural condition of man, this paper may close.

One of the most significant advances during this period from 1600 to 1850 was the gradual emergence of a theory of progress. Down to this time the prevailing view had been one of a decline from a primitive paradise or golden age. Now the attitude was gradually reversed and writers came to conceive of man as having developed contemporary civilization from a lower and ruder type of culture. A more dynamic view of history thus became possible. Francis Bacon contended that the present generation was wiser than any of its predecessors, and presented an eloquent statement of the advantages which might come from the development of applied science.⁸⁶ Vico denied the classical view of recurring cycles of development and postulated a spiral theory of progress.⁸⁷ Turgot in his *Sorbonne Discourse* of 1750 set forth clearly the doctrine of the continuity of history and the cumulative nature of progress.⁸⁸ Kant endeavored to state the laws of progress and to demonstrate the reality of moral progress.⁸⁹ Condorcet formu-

⁸⁶ *Advancement of Learning*.

⁸⁷ See Robert Flint, *Vico*; and Croce, *The Philosophy of Vico*.

⁸⁸ See J. Morley, *Critical Miscellanies*, Vol. II, and R. Flint, *The History of Philosophy of History*.

⁸⁹ *Idea of a Universal Cosmo-Political History*.

lated a theory of the development of successive stages of civilization and predicted remarkable advances in the century to come, as a result of the French Revolution and the application of science to human betterment.⁹⁰ Godwin expected much from the solution of human and social problems through the application of reason.⁹¹ Saint Simon advocated the creation of a science of social progress, and Auguste Comte worked out the first comprehensive scheme of human progress in many of its major phases.⁹²

VII. PRIMITIVE MAN ACCORDING TO MODERN ANTHROPOLOGY AND HISTORICAL SOCIOLOGY

The chief distinction between the doctrines concerning the natural condition of man which were set forth before and after the nineteenth century lies in the far greater tendency of the views in the latter period to rest upon scientific observation rather than deductive theorizing. The progress in this direction has, however, been a gradual development. The great impulse to anthropology and historical sociology came from the Lamarckian and Darwinian evolutionary biology. This view of natural genesis, as applied to man, revealed the long period of human development before the dawn of recorded history and served to emphasize the importance of the study of the life of primitive man as the best sort of introduction to history and to social science in general. Yet, in the beginning, much of this evolutionary anthropology and genetic sociology was

⁹⁰ See J. B. Bury, *Idea of Progress*; and Morley, *op. cit.*

⁹¹ *Ibid.*, and Godwin, *Enquiry Concerning Political Justice*.

⁹² See W. A. Dunning, *Political Theories from Rousseau to Spencer*; and A. Comte, *Principles of a Positive Polity*.

as much deductive as observational. Instead of making a careful preliminary survey of the facts of the life of primitive men, the first generation of students of early society tended, on the whole, to attempt to apply to social evolution a scheme of development which they had worked out *a priori* from a transfer of the terminology and processes of biological evolution to the field of social processes and institutions. Facts concerning social development were torn from their context and utilized to substantiate a pre-arranged scheme of social genesis. In the last twenty-five years, however, more critical methods have been introduced, chiefly as a result of the work of Professor Franz Boas and his students. The truly inductive methods in anthropology and historical sociology have been established, and the objective study of facts has preceded the systematization of doctrine. The actual reconstruction of the life of primitive man has been advanced in two ways—the investigation of the life of extant backward people and the remarkable development of the subject of prehistoric archeology.

Two years after the appearance of Darwin's *Origin of the Species*, a Swiss jurist, John Jacob Bachofen, published an epoch-making work, entitled *Das Mutterrecht*, in which he attempted to overthrow the long established doctrine, which had received the venerable support of the Bible and Aristotle and had the cumulative authority of many of the writers on political theory down to this time, namely, that the patriarchal family was the earliest type of human society. Bachofen's work is peculiar in that it was epoch-making in a radical direction and yet was closely connected with medieval and early modern procedure in method. Instead of basing his doctrines on concrete observations of primitive peoples, he chiefly devoted himself, like Vico and Wolf, to a study of folklore and classical mythology, and founded upon this his conclusion that the earliest

human society was characterized by promiscuous sexual intercourse and no fixed social relations, which period was followed by a period of feminine control of society.

Bachofen was followed in his revolt from the traditional view of the development of human institutions by a number of brilliant writers, the most notable of whom were Sir John Lubbock, J. F. McLennan, Herbert Spencer, Albert H. Post, Edward B. Tylor, Lewis H. Morgan, Andrew Lang, W. Robertson Smith, James G. Frazer, Charles Letourneau, Adolph Bastian, and Daniel G. Brinton. There were but few who opposed the general line of development presented by this school, which has come to be known as the classical or comparative school of anthropology. Of course, the individual views of these writers differed greatly in matters of detail but their general attitude justifies their inclusion in one group. The earlier anthropological views, supposed to have been sanctioned by God, and verified by the conclusions of Aristotle, Bodin, Pufendorf, Locke, Blackstone and others, received the support of only one prominent writer, namely, Sir Henry Sumner Maine, who, in his masterly works on primitive jurisprudence, based on long studies of actual conditions in India and of Greek, Roman and British history, set forth a strong case for the original nature of the patriarchal family as the first positive institution of human society. However, while his works on jurisprudence will always remain classics, this particular theory of Maine has long since been abandoned.

The views of the so-called classical school of anthropologists may be summarized as follows: There is an organic law of development in social institutions. The unilateral theory of evolutionary growth is rather rigidly supported with its implications of gradual and orderly changes, largely the same all over the world, and in general proceeding from the simple and confused relations to complex and well-coördinated adjustments. There is a real psychic

unity in mankind; that is, the organization of the human mind as far as its organic constitution and reactions are concerned is generally similar the world over. There is a very considerable uniformity of geographic environment in many different parts of the world, and that geographic environment is the main external stimulus to the human mind. From similarities of environment and the similarity of the human mind we may expect and do get parallelisms and similarities of culture among peoples widely separated in geographic distribution. A person, in reconstructing the picture of social development, is to be permitted to link together a series of isolated examples of any type of culture, taken from most diverse regions and irrespective of the totality of the cultural setting from which any example is extracted, in a prearranged scheme of development, and at the same time to hold that such is a proof of the natural line of evolution. In this respect the method is somewhat like the promiscuous searching of all times and lands by the "nature school" for the true state of nature."⁸³

So much for the ideas of this school in general. Their more specific views on the development of concrete social institutions may now be considered. In the first place, as regards their conception of the growth and development of the family, the primary social institution, they hold that it developed out of an original period of unregulated relations approximating promiscuity. It first took definite form as a sort of group marriage, where a number of brothers would marry a number of sisters, with rather common relations each with each. It then developed through the stage of polyandry, that is a marriage of a number of men to one woman, into a marriage between single pairs, but without permanent and exclusive cohabitation. Up to this

⁸³ A masterly review of this subject is to be found in F. Boas, *The Mind of Primitive Man*, Chapters vi-vii. See my article on "The Development of Historical Sociology," in *Publications of the American Sociological Society*, 1921.

time the relationships were traced through the mother, as it was impossible to identify the father of the child with any certainty. With the growth of the pastoral industry, however, and the wealth that it brought, the inconveniences of the maternal system, as this was called, the necessity for the man to dwell with the kinsmen of his wife and the impossibility of his transferring his property to his children, who belonged to their mother's clan, made it desirable to change the form of descent from the female to the male line. In order to do this it was necessary to get control of the woman, and this was accomplished through the successive stages of wife-capture and wife-purchase. With this transfer we get the patriarchal family of biblical and classical tradition, so long held to be the original type of society. The patriarchal family, with the breakdown of the ethnic basis of society, became transformed into the monogamous family of the present time with its bilateral system of tracing descent.

As regards the wider social institutions of primitive times they held that the earliest form of social organization wider than the family was the horde made up of a number of loosely organized families. Out of this, with the origin of totemism, there originated the famous institution of the totemic clan. From a union of these clans for mutual defense and coöperation there arose the tribe. Also, from the splitting up of an overgrown clan arose the form of social organization known as the phratry. The union of a number of tribes for purposes of mutual offense and defense produced the confederation, the largest group of primitive ethnic society. This confederation of tribes might be based on a maternal organization, as among the Iroquois; or, in a later stage, upon a paternal organization, as was the case with the early Greeks and Romans. Wherever commerce and industry, however, broke in upon this primitive type of society it created complications that compelled

the transition into civil society based upon territorial occupation and formal likeness of conduct. An often quoted example of this transition is that effected by the reforms of Cleisthenes in Athens.

Now this finely conceived scheme of evolution, with its mechanical sequence, was held to be universal and inherent in the very nature of things. To thinkers of this sort its course was as inevitable as was the transition from the state of nature to civil society through a social contract to the seventeenth century writers. Any group found in any stage of this evolution might normally be supposed to have passed through all of the previous stages and to have the others before it, unless interfered with from outside. The most harmoniously worked out scheme of this sort was that presented by Lewis H. Morgan in his great work on *Ancient Society*.

Recently, however, more critical anthropologists, notably Professor Boas and his disciples in the United States, Professor Marett in England and Professor Ehrenreich in Germany, have come to question some of the conclusions of this earliest school of anthropologists, both in regard to their fundamental principles, and with respect to the details of their scheme of social evolution. In the first place, they deny that similarity of cultural traits in widely different places indicates an exact similarity of previous development, but hold that parallelisms may be reached from quite different beginnings or by quite different routes of development. This is the now-famous principle of "convergence in culture." They also hold, though with more discrimination than Graebner and his school, that certain fundamental institutions may have been the property of the human race early in its history, and that these institutions have been carried to the "utmost parts of the earth" from an original center of dispersion. As regards the specific social institutions they deny, first, that the fam-

ily has passed from promiscuity to monogamy through any given set of stages, but hold that a monogamous pairing arrangement has been the universal form in all time, and that the other forms have been special types produced by unusual conditions. Again they deny the universality of the sequence of maternal and paternal organization or the necessarily greater antiquity of the former. Finally, they claim that the results of the study of concrete conditions among savages, viewed in the light of the totality of their culture, prove that there has been no such universality of types of social organization as was previously supposed and that there has been no well-ordered and uniform sequence which has taken place in many regions at diverse periods and in the same manner. This school does not deny certain broad parallelisms or stages of sequence, but protests against the attempt to reduce social evolution to any uniform and mechanical scheme which is not verified by actual investigation.⁹⁴

On the whole, the results of modern critical anthropology have been to reduce somewhat the differences between primitive and modern society which were stressed by earlier writers, chiefly on philosophical, theological, political or ethical grounds. There are many obvious similarities. The psycho-physical equipment of primitive and modern man are almost identical. There has apparently been no notable improvement in man's biological make-up during the past twenty thousand years. Primitive man seems to have been as socially inclined as modern man, even though the social aggregates were smaller in early days. Much the same stimuli in the fields of sex, religion and art operate today as among primitive peoples. Instinctive responses

⁹⁴ Good summaries of the views of this school may be found in the article by A. A. Goldenweiser, "The Principle of Limited Possibilities in the Development of Culture," in the *Journal of American Folklore*, July-September, 1913; cf. R. H. Lowie, *Ibid.*, 1912, pp. 24-42. See especially Goldenweiser, "Four Phases of Anthropological Thought," in *Publications of the American Sociological Society*, 1921.

are largely identical in each. Methods of social control through the operation of custom, tradition, and the crowd-psychological state do not differ widely in primitive and modern culture. On the other hand, there are undoubtedly many differences between primitive and modern culture. These differences are due chiefly to the advances in science and material culture. Modern thought is much more dependent upon verifiable facts than primitive thought. The philosophy and science of modern society, particularly applied science, is lacking in primitive society. The material culture of modern society is incomparably more elaborate. In modern society there is far more positive knowledge and more deliberate and consciously thought-out effort. There is more of social self-consciousness and deliberate progress in modern culture. There is a far greater degree of heterogeneity and development of personality and individuality in modern society. Yet, one must remember that these differences between primitive and modern society are differences in degree and have been but gradually built up. There is no sharp line of demarcation between primitive and modern society. The most important contrast, that in material culture, has been produced primarily by the developments of the last two centuries.⁹⁵

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⁹⁵ See A. A. Goldenweiser, *Early Civilization*, especially chap. xvii.

FREUD'S SPECULATIONS IN ETHNOLOGY

THE Viennese physician, Sigmund Freud, has instituted a revolution in psychology, the far-reaching influence of which it is impossible to measure. Yet, at the present time, his teaching is the subject of violent dispute. But there is something more in this controversy than the opposition that is almost invariably raised by any attack upon traditional views, such as was displayed in the past by the experiences of such men as Galileo, Darwin and Lister. For Freud and the more reckless of his disciples have exposed themselves to perfectly justifiable attacks by including in their teaching much that will not stand the test of serious examination. These doubtful elements of Freud's doctrine happen to include its most disagreeable aspects.

Put into its briefest expression, it can be said that Freud's great contribution to the study of the mind was his insistence upon the necessity of analyzing the expressions, and especially the vagaries, of behavior and belief and endeavoring to trace them back to their real source in the individual experience of each of his subjects. Incidentally, he called attention to the vast importance of the persistence of emotions excited in former years by events which had been suppressed because they were unpleasant and so forgotten. But this unconscious experience continues to exert a profound influence upon behavior and mental attitude. By analyzing the symptoms of the subjects of men-

tal disturbance and especially the material of their dreams, which is so largely composed of an escape of this repressed experience, Freud was able to interpret the behavior and the ideas of such patients, and by similar means to shed a flood of light upon the eccentricities and the ordinary actions of normal people. The essence of Freud's innovation was to take all the statements of his patients seriously, and to arrive at an explanation of them by a careful examination of the incidents in the subject's life-history which would provide the meaning. It was in fact psycho-analysis, an enquiry into the history of the genesis of the symptoms.

Every man who enunciates a new view which calls for a reconsideration of the stereotyped method of doing things, or compels men to think for themselves, is sure to meet with vigorous opposition, especially from the leaders of his own profession, who have systematized their own formulas, and in many cases achieved such success as they have by strict adherence to the rules so framed. As Anatole France wittily puts it, "*les savants ne sont pas curieux.*" But when Freud claimed that the hidden motives of most of our thoughts and actions (and those of the most innocent and chaste children of tender age) were mainly sexual, he gave his critics a ready weapon with which to attack a reform that claimed such an incredibly repulsive background for our conscious life. But if the conventions of our society and the instinctive decency of human beings compel us to conceal the unpleasant aspects of our experiences, it is not surprising to find a cesspool when the lid is taken off the collection of incidents in our life-history that have been suppressed.

Not content with analyzing the unconscious and discovering its real unpleasantness, Freud has postulated a "universal symbolism" into conformity with which he tries to force the incidents revealed in dreams. This procedure is wholly illogical and in flagrant conflict with the funda-

mental principle of his own method (i. e., the analysis of the *individual's* actual symptoms and beliefs); but the aspect of Freud's work that has been most violently attacked by reason of its unsavoriness is precisely this unjustifiable pretence of "typical symbols." Another element that has contributed to Freud's world-wide notoriety is the fact that his doctrine has given evil-minded persons the excuse, in the name of science, to wallow in pornography.

I have emphasized these aspects of Freud's work because his incursion into ethnology¹ reveals the objectionable and erroneous side of his psychology in its most extreme form; and in reviewing such nonsense as *Totem and Taboo* it is right I should explain, as a justification for noticing such a book, that those who appreciate the tremendous theoretical importance and practical value of Freud's method in its purely psychological aspect should do all that lies in their power to erase so damaging a blot of nastiness and error, which must weaken the influence of a great reform and hamper its full application in every field of humanistic study and endeavor. In his preface, Freud tells us that "The two principal themes, totem and taboo, which give the name to this small book are not treated alike here. The problem of taboo is presented more exhaustively, and the effort to solve it is approached with perfect confidence. The investigation of totemism may be modestly expressed as: "This is all that psycho-analytic study can contribute at present to the elucidation of the problem of totemism." The book consists of four chapters called respectively, "The Savage's Dread of Incest"; "Taboo and the Ambivalence of the Emotions"; "Animism, Magic and the Omnipotence of Thought"; and "The Infantile Recurrence of Totemism." The first chapter is a brief abstract, mainly of the writings of Sir James Frazer, concerning the customs of

¹ *Totem and Taboo: Resemblances between the Psychic lives of Savages and Neurotics*, by Professor Sigmund Freud. American Translation edited by A. A. Brill. George Routledge & Sons, London, 1919.

exogamous peoples who regard sexual intercourse between members of the clan as incest and a crime punishable by death. There is no argument, but quite inconsequently at the end of the chapter Freud claims: "What we can add to the further appreciation of incest dread is the statement that it is a subtle infantile trait and is in striking agreement with the psychic life of the neurotic."

No one could accuse Jung of Zurich of any lack of enthusiasm for such enquiries or doubt his belief in the value of dream-interpretation and the importance of the sexual factor as an unconscious influence in behavior and phantasy. He even goes so far as to claim that "the material which is at the disposal of the unconscious consists . . . not only of infantile memories but also 'racial' memories, extending far beyond the limits of individual existence."² His is no half-hearted acceptance of the method of psychoanalysis as a means of unravelling the meaning of the actions and beliefs of individuals and the significance of myths. Yet he refuses to adopt Freud's idea of universal symbols which is the fundamental argument of the book under review. For he truly says: "You get caught in your own net if you give credence to the idea of unalterable, permanent symbols."³ Coming from one who accepts so much of the doubtful parts of Freud's teaching as Jung does, and further, is guilty of much rash speculation in regard to myths (*Psychology of the Unconscious*), this criticism is of special significance. But Jung also makes a direct attack upon the fundamental motive of the argument Freud has put forward in *Totem and Taboo*. Thus, in his discussion of the mechanism whereby some mental conflict in adult life seems to revive the emotions associated with an experience of early childhood, Jung⁴ makes

² *Analytical Psychology*, p. 372; also *The Psychology of the Unconscious*.

³ *Op. cit.*, p. 265.

⁴ *Op. cit.*, p. 230.

these statements: "(Freud) called the phenomenon of reactivation or secondary exaggeration of infantile reminiscences 'regression.' But in Freud's conception it appears as if the incestuous desires of the Oedipus complex were the real cause of the regression to infantile phantasies. If this were the case, we should have to postulate an unexpected intensity of the primary incestuous tendencies. This view led Freud to his recent comparison between the so-called psychological "incest-barrier" in children and the "incest-taboo" in primitive man. He supposes that a real incestuous desire has led the primitive man to the invention of a protective law, while to me it looks as if the incest-taboo is one among numerous taboos of all sorts, and due to the typical superstitious fear of primitive man, a fear existing independently of incest and its interdiction. I am able to attribute as little particular strength to incestuous desires in childhood as in primitive humanity. I do not even seek the reason for regression in primary incestuous or any other sexual desires." From the psychoanalytic side this destructive criticism of Freud's speculations is perfectly justified. But if we examine them from the ethnological side we find that the evidence is even more emphatically fatal to his interpretation.

When Freud suddenly intruded into the domain of ethnology and mythology, he neglected to make himself acquainted with the data of the subject he was attempting to interpret. With no first-hand knowledge of facts he did not even go to the original memoirs of the collectors of the published evidence, but relied upon compilations of such of the facts as it suited the convenience of Sir James Frazer, Robertson Smith, Andrew Lang, Wundt and other not infallible summarizers to make. One can no more analyze a custom or a myth thus stripped of all its details and associations by this triple filtration than Freud himself could analyze a dream reported to him by a consulting

physician who himself had received it from the practitioner who had actually seen the patient. Freud himself would be horrified at the mere suggestion of the feasibility of attempting dream-analysis without coming into direct contact with the patient and investigating his life-history. Yet he plunges into the vastly more difficult task of explaining totemism without paying any attention whatsoever to its history or to the circumstances under which it came into being and was diffused abroad in Africa, Asia, Australia, Oceania and America.

The slightest knowledge of the environment of a totemic clan or of a people with exaggerated incest-taboo should have shown him that his attempted explanation was irrelevant and nonsensical. He has ignored most of the instinctive features of totemism and suggested no serious explanation of them; but obsessed with his precious "Oedipus complex" (the real origin of which he totally ignores) he has siezed hold of the incest-prohibition, and treated it as the essential feature of a totemic system, when, all the time, direct evidence exists to show that the incest prohibition, or exogamous rule, has no essential relationship whatever to totemism.

It is a characteristic foible of modern ethnologists to imagine that it is possible to excogitate the past history of mankind without any real knowledge of the facts simply by reiterating certain stereotyped phrases such as "animism," "sympathetic magic" and "psychic unity." Freud has read some of this jargon and jumped to the conclusion that, if it is the accepted teaching of modern ethnology, he can at any rate make it look more plausible by instituting analogies with the symptoms of his neurotic patients. He recognizes that the connection between totemism and exogamy is denied. (See page 6.) He also recognizes that a great difference exists between the dread of incest and the prohibition of marriage in the clan group. "Exog-

amy makes it impossible for the man to have sexual union with all the women of his own group, with a number of females, therefore, who are not consanguineously related to him, by treating all those women like blood relations. The psychological justification for this extraordinary restriction, which far exceeds anything comparable to it among civilized races, is not, at first, evident. Thus, these savages reveal an unusually high grade of incest dread or incest sensitiveness, combined with the peculiarity, which we do not very well understand, of substituting the totem relationship for the real blood relationship. But we must not exaggerate this contradiction too much, and let us bear in mind that the totem prohibitions include real incest as a special case." (pp. 8, 9.)

The reader can best judge the value of these statements or the lack of it, when he knows the real facts concerning the "incest taboo" and the practice of exogamy. In any region where it is practised, exogamy is not connected with totemic clans at all, but with what is called the dual organization, a form of society in which the community is divided into two parts. Connected with the dual organization is the rule that wives or husbands, as the case may be, must be sought in the other side of the community. Thus it follows that the children of a brother will be possible mates of his sister's children, for they will belong to opposite sides of the dual organization. Descent in the groups goes through the mother, so that the children of the sister will belong to her side of the community, and those of the brother to the side of his wife, that is the other side to his sister. On the other hand, the children of two brothers or two sisters may not marry, for they will obviously be on the same side of the community. Thus it comes about that a man may marry a girl very closely connected to him by birth, while some other girl whom he has never seen and to whom he is not related by birth is

forbidden as a wife. It does not require a minute's thought to see that no innate revulsion from incest can have brought about this condition of affairs. The rule of marriage is arbitrary. The whole community for some reason or other is divided into two inter-marrying halves. It does not seem to have occurred to Freud that the rule of exogamy may after all be a positive one, and not negative. In other words, a man is not denied a wife in his own side of the community for any innate biological reason, but because certain statesmen about fifty centuries ago deliberately formulated the decree that his wife must be chosen from the other side. This was done for reasons bound up in the constitution of the community and the infringement of this arbitrary rule has little in common with incest as that word is used by European peoples.

The rule of exogamy in a dual community can be compared to what would happen in a village composed of one street with houses on either side. The rule of marriage is "across the street." The analogy will carry further. For each house may be likened to a totemic clan. The rule is that a member of any clan may not marry a member of the same clan, or of any other clan on the same side of the street. That is, the exogamy is not for one clan, but for a whole series of clans; which shows that the rule, so far as the clan system is concerned, is entirely arbitrary. In course of time, however, the dual grouping breaks down, and the exogamous rule then applies to the clan only. The rule of marrying across the street can have no meaning when the street has disappeared, so the members of each clan group all the other clans together as sources of mates, thus widening the area of choice for brides and husbands.

The final stage of the process is that in which marriage between relatives is forbidden, a stage which approximates closer than the other two to a prohibition of incest.

The facts, therefore, go dead against the theory that any idea of prohibiting incest led to the institution of exogamy. It is only as the old order of civilization breaks down that men come consciously to restrict marriage on account of relationship. Had Freud investigated the beliefs regarding incest, or attempted to fathom their real meaning and associations, he would have discovered that among the very people who invented totemism incestuous intercourse in the ordinary sense, i. e., between brothers and sisters, or parents and their own offspring, was a regular practice on the part of their rulers; and their gods were accredited with the same habits. If one studies the circumstances under which this intense dread of incest occurs among people of lowly culture, it will be found to be one of the ingredients of a remarkable complex and to be related to the other elements of the culture in a definite and arbitrary way. The ancestors are reported to have originated the clan by an incestuous act, and in many cases the latter is intimately related to the story of the flood and of the creation of mankind. In other words the incest is an incident in a very complicated story which was brought from some outside source to most of the places where it is told. *The incest taboo is not, as Freud supposes, the direct expression of the psychology of the individual; it is the result of an arbitrary chain of events which has little in common with the role of the incest motive of neurotic patients. The latter is not due to any innate feeling but the result of some individual experience.*

Freud himself occasionally gets a glimmering of this truth, and has actively to repress it so as to save his speculations from destruction. Thus (pp. 52-3) he sees clearly that "taboos are very ancient prohibitions which at one time were forced upon a generation of primitive people from without, that is, they probably were forcibly impressed upon them by an earlier generation. . . . The prohibi-

tions maintained themselves from generation to generation, perhaps only as the result of a tradition, set up by paternal and social authority." But the admission of this obvious truth, that the custom was *forced from without*, and *maintained by social authority* would have destroyed the whole basis of Freud's speculations. Hence, he is driven to perform a mental somersault, and to commit himself to such unconvincing claims as the following two sentences: "But in later generations they have perhaps already become organized as a piece of inherited psychic property. Whether there are such 'innate ideas' or whether they have brought about the fixation of the taboo by themselves or by coöperating with education no one can decide in the particular case in question." (p. 53.) It is an insult to the intelligence of his readers to imagine that an appeal to a belief in so crude a form of transmission of acquired characters can neutralize the force of his preceding sentences, which are a plain statement of the truth, and as such fatal to the elaborate structure of guesswork he builds upon the claim that arbitrary and artificial beliefs can be hereditarily transmitted in any other way than by the maintenance of social tradition. Quite regardless of his earlier statement that such taboos were forced upon a generation *from without*, he claims that the fact of their remaining taboos (even if, merely for the sake of argument, we accept his pretence for the hereditary transmission of such arbitrary and irrelevant acquired characters) proves them to be "the oldest and strongest desires of mankind." (p. 54.)

In an argument intended to justify far-reaching hypotheses, one has a right to expect more cogency than this frivolous and inconsequent statement. If such customs were imposed from without, as Freud quite justly surmises, they may have little relevance to the desires of the people on whom they were forced. Our ancestors used once to

go naked; about twenty centuries or so ago strangers introduced the social convention of wearing clothes; at the present time there is an all-powerful taboo against our appearing in the public society of our fellows without clothes; but it would be an abuse of words to pretend that the British people have "inherited" the necessity of clothing themselves or that the wearing of clothes is "one of the oldest and strongest desires of mankind." It is unjustifiable to make such claims in a serious argument; and Freud makes one doubt whether he intends us to take his frivolous and inconsequent statements as anything more than an elaborate joke. But, if this is the case, no one has been so gravely compromised by their master's wit as Freud's own disciples, such as Karl Abraham (*Dreams and Myths*), Riklin (*Wish Fulfillment and Symbolism in Fairy Tales*), and Otto Rank (*The Birth of the Hero*), to quote three out of many disastrous results of the adoption of Freud's lead in the pretended interpretation of myths and social practices.

In this insistence upon the significance of incest, Freud seems to have missed the real meaning of the analogy between the incest-dread of civilized peoples and the incest-taboo of relatively uncultured societies—taking it for the sake of argument that the exogamous rule really signifies a taboo and not an injunction, which, in itself, is a tremendous assumption. Every normal adult is endowed with sexual instincts which on certain occasions seek satisfaction unless restrained. There is no *instinctive* aversion from the satisfaction of these desires in any way or on any occasion; but the conventions of our society have raised a veto against the indulgence of the sexual instinct within the family circle (except between husband and wife), perhaps, to some extent, as the result of the breaking down of the original exogamous rule of the dual organization and the restriction of marriages to persons not related con-

sanguineously; and the strength of the abhorrence of incest is, in some measures an expression of the need for fortifying each individual against the opportunities which the circumstances of family life offer for such indulgence. In the course of its individual experience every child has to learn the conventions of the society into which it is born, and to discover the restraints which the taboo against incest (or the rule of marriage outside a given circle) imposes upon everyone. Most children learn these lessons unconsciously and without any violent emotional storms; but it must frequently happen in the experience of children, especially under the evil housing conditions of slum-life, that the knowledge may be acquired under disturbing circumstances which create a moral wound associated with some incestuous incident or longing. But because such episodes play an obtrusive part in the repressed experiences of neurotic patients is surely no justification for attributing incestuous desires to all children, or of making the incest-motive the ruling passion of all peoples of every race and age. The great range and variety of exogamous rules that are to be witnessed in societies low in the cultural scale, shows beyond doubt that the rule of exogamy is arbitrary, and that its meaning can only be understood on the basis of an inquiry into the history and origin of the community.

Not only does Freud ignore what is known about the relationship between the "incest-taboo," or really, exogamous rule, and totemic clans; he also resorts to arbitrary and speculative means of explaining the mode of origin of the system of totemic clans. He uses the theory of the Primal Horde of Atkinson and Lang, one of the most fanciful doctrines ever invented. This theory has furnished McDougall with material for the foundation of a theory of pugnacity; Trotter with the basal assumption of his theory of the Gregarious Instinct; and many other writers

with a working hypothesis for various theoretical structures. Yet not a particle of evidence exists to justify the belief in such a thing as a "primal horde." Thus we get Freud's unwarranted assertions that "kinship is older than family life" (p. 225), that "the most primitive organization we know, which today is still in force with certain tribes is *associations of men* consisting of members with equal rights, subject to the restrictions of the totemic system, and founded on matriarchy, or descent through the mother" (p. 235). The most primitive form of society known to us is that of the family, pure and simple, which is found among peoples who have no totemic system, peoples who are still in what Perry (*The Children of the Sun*) calls "the food-gathering stage" of culture. In its typical form totemism is, as Rivers has pointed out, associated with societies of a relatively high stage of culture. But Freud is not content with making the grave mistake of claiming that the totemic clan is the earliest known form of society. He goes on to derive it from a purely hypothetical and quite unknown institution, which, if the evidence of the family life of the anthropoid apes is to be accepted, never had any existence in fact, the "Darwinian primal horde" (p. 236, n. 78), which he borrows from Atkinson and Lang. This was assumed to consist of a father with a harem and the consequent children. The father had expelled the young males when they arrived at maturity, "One day the expelled brothers joined forces, slew and ate the father, and thus put an end to the father horde. Together they dared and accomplished what would have remained impossible for them singly. Perhaps some advance in culture, like the use of a new weapon, had given them the feeling of superiority. Of course, these cannibalistic savages ate their victim. This violent primal father had surely been the envied and feared model for each of the brothers. Now they accomplished their identification

with him by devouring him and each acquired a part of his strength. The totem feast, which is perhaps mankind's first celebration, would be the repetition and commemoration of this memorable, criminal act with which so many things began, social organization, moral restrictions and religion" (p. 235-6). Freud continues this vein of speculation in another place and drags in the favorite obsession which has been responsible for so many of his fallacies and has excited the justifiable ridicule of his critics. "I want to state," he says, "the conclusion that the beginning of religion, ethics, society and art meet in the Oedipus complex. This is in entire accord with the findings of psychoanalysis, namely, that the nucleus of all neuroses as far as our present knowledge of them goes is the Oedipus complex. It comes as a great surprise to me that these problems of racial psychology can also be solved through a single concrete instance, such as the relation to the father" (p. 260). Freud's surprise at the result of his investigations is not equal to the surprise of any sensible reader that he should assume responsibility for the publication of such nonsense. It would be hard to find any argument dealing with origins that is so closely packed with misstatements as that of Freud on the origin of totemism. The gymnastic feats performed are amazing, and leave in the mind of the reader a feeling of wonder at Freud's fatal ingenuity, strongly tinged with other feelings of a different nature, that the creator of the new psychology could be guilty of putting forward such patently absurd claims. Can he produce one item of evidence pointing to the existence of a primal horde? Can he give any evidence for his statement that these men were cannibals? Can he explain why one act, performed in one place, at one time, has had such tremendous repercussions on mankind? Above all, does he expect us to believe that this emotional experience has influenced the whole of mankind from the

day on which the young men killed and ate their fathers. What was happening in the other hordes where the father was not killed? How does Freud account for the institution of the dual organization of society, the existence of which he does not seem to have suspected? It is safe to say bluntly that this argument of Freud is nonsense; and no one who has a particle of knowledge of the real facts will be deluded by it for one moment. It is a pity that such rubbish should be foisted upon the admirers of this great reformer as representing the considered views of ethnologists. But if the quotations from his book that have so far been considered reveal a complete ignorance of (if not a contempt for) ethnological truth, and a disregard for consistency in argument, the Oedipus obsession leads Freud to offer even more grotesque insults to his readers' intelligence. For example, he offers the following "explanation" of the persistence of totemism: "We let the sense of guilt for a deed survive for thousands of years, remaining effective in generations which could not have known anything of the deed. We allow an emotional process such as might have arisen among generations of sons that had been ill-treated by their fathers, to continue to new generations which had escaped such treatment by the very removal of the father. . . . But further consideration shows that we ourselves do not have to carry the whole responsibility for such daring. Without the assumption of a mass psyche, or a continuity in the emotional life of mankind which permits us to disregard the interruptions of psychic acts through the transgressions of individuals, social psychology could not exist at all. If psychic processes of one generation did not continue in the next, if each had to acquire its attitude towards life afresh, there would be no progress in this field and almost no development" (p. 261-2).

It would be necessary to go far to discover a piece of intellectual obscurantism that will match this statement. Once again doubts arise as to whether Freud really means us to take such stuff seriously. Later on, he states that some mechanism exists by which people can interpret the emotional states of others (p. 263). Thus the people of one generation receive from their fathers the emotional processes that they, in their turn, had received from their ancestors. Thus any man or woman receives from his parents the consequences of the fact when the young men killed and ate their father. But what of all the other emotional experiences that every living creature has experienced? What of all the mental disturbance that has occurred throughout the ages? Does Freud wish it seriously to be believed that only one set of experiences has had any real weight in the formation of art, morality, law and so forth? Does he claim that every other emotional experience has played no part? What is he going to say about cases where the Oedipus complex has demonstrably been absent, as, for instance, in the case of Claustrophobia published by Rivers? It is easy to understand the obsession of Freud. The Oedipus myth is for him the only complex. Therefore, all history must be interpreted on that basis, regardless of facts. But the ethnological history of the Oedipus story itself must be suppressed! To Freud and his followers it is taboo! For the examination of its development would utterly destroy such speculations as this and his other ethnological vagaries. But in the end, he is brought face to face with a fact that even his ingenuity cannot pretend to solve; his ship runs on a rock that wrecks it beyond hope. After a long argument dealing with the association between the totem and the father, he ends with the pathetic confession: "I am at a loss to indicate the place of the great maternal deities, who perhaps everywhere preceded the paternal deities" (p. 247). He

makes a half-hearted attempt to surmount this obstacle, to salvage the ship, but it is of no use. The deed is done. He is forced to admit that he cannot offer any explanation of the fundamental principle of all early myth and religion, the essential factor underlying totemism and taboo—the life-giving Great Mother, who is the parent of all the customs and beliefs which he has so signally failed to understand.

It is a lamentable duty to have to expose in this frank way the ignorance of ethnology and the defective logic which Freud has displayed in this book. But the full realization of the tremendous significance of the reforms he has introduced in psychological method makes it a matter of importance to prune away such excrescences as will hamper the growth of his serious teaching.

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THE PSYCHIC NATURE

MOST OF US have hazy notions as to our own inner processes. What is that mysterious thing called the WILL? What causes emotions? How does thought arise? Has the human being a soul?

A resolute clearing of the mind of all preconceived notions and prejudices, coupled with an unbiased consideration of facts, will go far to dissipate the fog and bring into clearer view the working of the psychic nature.

In olden times, before man had a knowledge of the physical sciences, an inherited inquisitiveness compelled a seeking for the causes of the phenomena that were constantly occurring before him in the operations of nature, and for lack of exact knowledge he invented supernatural powers to account for them. As science brought to light the natural causes, the fantastical explanations were very reluctantly abandoned, but not until the beliefs and fixed ideas had tried to maintain themselves by discrediting science and persecuting the discoverers of truth. Even after general acceptance of exposed facts, the old words lived on to confuse the understanding of unscientific minds; traces of them remain to the present day; to the ordinary mind the words, rising and setting sun, arouse a conception that is contrary to the positive facts.

It is not different in this day and generation, with respect to those regions that remain unexplored; particularly is this true in regard to the psychic nature of man. It is

here that ancient history repeats itself; fanciful explanations of a supernatural nature abound, with words coined as names of causes of nervous reactions, which are largely unknown. May it not well be that such words as soul, karma, spirit, astral body, conscience, are as much misnomers, as were the early designations of powers that produced nature's manifestations?

It is only within the last twenty-five years that any real knowledge of the operations of the nervous system has been obtained through psychological investigation. Some of the old ideas have been disproved, but the old words remain to cause confusion of thought and to prevent a clear understanding of the actual facts. Because of this conflict between the significance of old words and the new facts, it is difficult to convey any clear idea of the working of the nervous system by using the old terms; almost as much so as it was in the olden times to disabuse men's minds of the mythical conceptions regarding the operations of the physical universe. The old words must take on new meanings, or new words must be coined, before the new truths will be generally conceived. The human race is not benefited by even the highest wisdom until knowledge is reduced to simple terms that coincide with ingrained patterns in the nervous system of a majority in any section of mankind, and there is no way to create such patterns in any multitude other than by applying newly-acquired facts to common experiences.

A notable advance in the science of psychology followed the dissemination of the simple facts discovered by Gregory Mendel; although the facts were published in the year 1865, it was not until 1900 that De Vries called attention to them, and not until 1901 that a translation was published by the Journal of the Royal Horticultural Society. These discoveries, which have been amply supported by recent investigations, have had a marked effect in the

attainment of knowledge of the composition and action of the nervous system.

To put into plain, simple, and untechnical language the gist of those discoveries requires but few words and a single illustration.

The element from which all living tissue springs is a minute cell, which has a kernel or nucleus containing thread-like filaments, named chromosomes. There exists an active ingredient which causes these cells to grow, to waste away, to be renewed, and to increase in power when properly exercised. When through growth these cells attain a certain stage or size they divide, one cell forming two cells, with each one containing its equal quota of chromosomes. Multiplying in this manner they form a structure that agrees in kind with the character of the original cell.

Mendel discovered that the character of the descendant was fixed by the content of the cell to which both parents contributed; that the likeness or unlikeness of the factors transmitted by both parents had a controlling effect upon the character of the offspring. It is now well known that variation in the character of the immediate parents is due to differences in the chromosomes of their parents and so on backwards until the line reaches the first appearance of life upon this planet, the present stage having been reached through the effects of environment and experience.

When the chromosomes in both parents have like factors the progeny will be true to type, but when they have unlike factors the progeny will partake of both and appear as a hybrid, that is, it will manifest the divergent characteristics and vary from its parents in a greater or less degree. But when such hybrids produce, some of their issue will revert to the pure type and some will remain hybrids; the theory being that like factors tend to coalesce and produce their kind, but for some unknown cause this tendency is not sufficient to cause a complete segregation, so that some of

the cells retain the hybrid quality and produce hybrids. Curiously enough, there seems to be a law controlling these results as the ratio is almost uniformly one of each pure type to two hybrids.

A simple illustration is found in the case of plants; if in both parents the color factor is pure white, or pure red, the seeds will produce plants that have pure white, or pure red flowers; if one parent has the pure white factor, and the other has the pure red factor, the combination will bring forth red and white flowers, but when the pollen from these hybrids coalesces to form seeds, the plants growing from them will produce one pure white, one pure red, to every two red and white flowers.

This illustration from the vegetable kingdom is taken because of its simplicity. In this kingdom where the organism lives, flourishes, or withers and dies, as its environment is favorable or unfavorable, there are comparatively few factors in the chromosomes and the effects of heredity are more easily observed. In the animal kingdom there is an increased number of factors, which permit of a wider range in variation and adaptability to conditions. In the human organism a vastly greater degree of variation enables it to make the environment, in some degree at least, better fitted to its needs. More than this, for the diversity in factors enables man to respond to experience, to form new combinations, to increase his powers of understanding, until now he seems to be a being of a different kind from the animal, instead of different in degree only, as is the actual fact.

It has been abundantly proved that Mendel's Law has universal application, that it applies to every form in which life is found, but the factors in the chromosomes of human beings have become so multifarious, and of such superior quality, as to make it impossible to detect, or even conceive of the exhaustless possibilities of combination of the factors

in the chromosomes of the parents, which absolutely determine the character of their offspring.

There is not a scintilla of evidence to indicate that man is other than a composite of the chromosomes received from his ancestry; all of his reactions are now known to be governed by the factors that are thus imbedded in his nature.

Let us start at the beginning and see how the human being is built up and improved. The question as to the cause, the initial impulse, that motived the production of forms for the manifestation of life is still within the realm of metaphysics, with which we have nothing to do in this article; nor shall we stop to trace the progress of evolution from the early forms, merely remarking that evolution, at its base, is nothing else than successive improvement in the instrument through which life manifests; improvements that have been forced through experiencing the results of manifestation, which when untoward served to create factors of restraint, or when beneficial to strengthen and increase the factors conducive thereto. Thus, the factors in the chromosomes of the lower animals increased until a new form was needed for their manifestation, and the human race appeared.

Skiping the long story of the evolution from prehistoric man to man as he is today, let us consider the unassailable facts of the present time.

The seed, created and fructified by the parents, multiplies by division to form the foetus, which is permeated by the factors contributed by both parents. This involves imbedding in the chromosomes of the infant the factors inherited from the animal kingdom, but refined and modified by the experiences through which its human ancestry has passed. Such inherited characteristics form the basic character of every individual. These basic factors impel the organism to manifest along established lines; to pre-

serve life; to seek well being; to aim at satisfactions; to mimic or ape attractive things; to resent all hampering of the urge to manifest; and to procreate that the torch of life may be carried on.

The normal manifestations of the basidia of man have been named passions, instincts, intuition, genius, but when the natural working of the nervous system is fully understood, it will be seen that these words have as little application to actualities, as had the ancient myths to the actualities of nature's phenomena. Words invented to represent unknown causes must give way, or be invested with new meanings, as scientific investigations reveal the actual causes.

Without postulating identical operation, but simply to convey a clear idea of the working of the nervous system, let us assume an electrical analogy, not that it fully or accurately describes the working of the inner forces, but that it is the nearest physical example through which to clearly indicate the conception.

There are two sets of nerves; the sensory which transmit the effect of outward stimulations to the nucleated cells, which are principally in the cerebrum, and the motor nerves which are actuated by the energy given off by the sensory cells, and which transmit that energy to the muscles. Now, if we liken the sensory cells to leyden jars, from which electrical energy is discharged when the charge attains sufficient power, and if we imagine the sensory energy as positive, and the motor cells as negative, we may describe the process analogically as follows: vibrations in the ether impinging upon the end organs of the sensory nerves induce a positive current to the collecting cells; discharge of this energy creates a negative current in the motor nerves, which carried to the muscles produces positive action. As in electrical action, there is an inductive effect accompanying the positive current; that is, all

those factors in the chromosomes that synchronize with the direct current, either through likeness of factors or from close association in previous experiences, will be inductively set into action, to aid or strengthen the exteriorally induced impulse, or to oppose or weaken it.

Investigations by psychologists seem to have established the following facts:

- (1) That, aside from inherited patterns and the re-establishment of patterns through induction, there can be no polarization of factors in the chromosomes without outer stimulation of the end organs of the sensory nerves.
- (2) That there will be no response to stimuli unless the nervous system contains chromosomes having the factors appropriate to movement from the exciting cause; that is, if the factor of red is absent, the individual will be color blind to red.
- (3) That upon stimulation there is a kind of polarization in the nerve factors that traverses an arc in the system; from the end organs receiving the stimulation to their related muscles, which are thrown into activity when the impulse is strong, but only nascently when it is weak.
- (4) That the result of stimulation is not a simple reaction, but that the correlation among all the allied factors in the organism is such that every part of the body is affected in a greater or lesser degree. The stimulation of seeing a pin upon the floor, arousing the factor of acquisitiveness, reacts upon every portion of nervous and muscular system, and every part of the body is brought into play in the act of picking it up.

These facts compel a readjustment of our conceptions as to the operation of our nervous system and mental attitude towards them, which will be taken up in succeeding papers.

II. DEVELOPMENT OF THE PSYCHIC NATURE

Taking the facts as developed in the first paper as the base, we may consider how the human being starts and develops.

The infant fresh from its mother's womb, is controlled by the factors making up its nervous system; these are wholly internal; external impressions find no factors directly related to them until experience has set them up. The inherited factors are those that have been created by the experiences of the race to which the infant belongs, and vary as its particular line of ancestry differs from other lines. It is often repeated that "blood will tell," but it is not blood, it is the character of the chromosomes and their fixation in certain forms or patterns, that tell.

The cerebrum of an infant is smooth. It is not until training and experience have modified the original form of the neural patterns, and have created new ones, that the infant responds to outward stimuli in any definite manner. Such training and experience work to form new nerve centers, and the cerebrum develops ridges and hollows to make room for them. These new formed focusing centers are largely of an inhibitory character; they restrain the primal passions from exerting their full force and effect. The only fear that an infant exhibits is elicited by any lack of support; whether this is the persistence of patterns created by the experience of falling from a tree or not, it is a fact that the slightest removal of the support to which the infant is accustomed will bring an immediate manifestation of fear. Experience soon teaches that there are other things to be feared in the environment; place a

lighted candle before an infant and it will at once reach for the bright flame; if the result is a painful burn, a pain pattern will be formed to be a fixed factor throughout life. Such patterns do not require actual experiences to call them into activity, for they will often form upon suggestion awakened by like appearances, or in like circumstances; for instance, the burnt infant will shrink from any bright object that recalls the candle flame.

Hamper, in any way, the free movement of an infant and it will exhibit rage, but it will learn through experience that the primal pattern of imperiousness must be restrained if the personality is to live comfortably among its fellows.

Smile before an infant and its mimicry patterns causes it to smile in return. This pattern receives little restraint throughout life, as no discomfort arises to inhibit it.

The infant clings to those with whom it lives, manifesting that gregarious pattern, which it has inherited from its ancestry.

The early years of human beings are preëminently the cell-forming years, and only the few develop much beyond their school days. The mental tests applied to those conscripted into the army proved that a very large percentage of the men had formed no new cells since their fourteenth or fifteenth year. Such persons are controlled by patterns inherited from their parents, subject, of course, to modifications created by their own personal training and experience. Such patterns are mainly applicable to the coarser phases of existence, and the great majority of people are compelled to live upon the lower plane of the primal patterns, which are so firmly fixed that nothing short of a cataclysm can disrupt them.

Not only are the inherited patterns the most powerful, but they are the quickest to form and induce action; powerful indeed must be the restraints that can inhibit them. In

the early days such unhindered responses were necessary to the preservation of existence; if a man attacked by a tiger had been obliged to arrange a pattern he would have been in the tiger's mouth before he could have coördinated his responses, but he struck before he was conscious of his actions, because his primary and most powerful patterns of self-preservation worked automatically and unhindered. The modern man is governed by precisely the same conditions; in any sudden emergency he will exhibit his primal passions, when there is no time to form the restraining patterns that he has acquired through training and experience. This is exemplified in such phrases as, "I went off half-cocked," "I did that before I thought," "I did not stop to consider."

That man is dependent upon the factors he inherits, and upon their formation into patterns, is proved by common experience. A great number of presentations of an object, with pronounciation of its name, is required before a young child will form the word pattern, through the ear, so as to associate it with the pattern of the object, formed through the eye, and the process is not different in the adult in acquiring the technique of any art. What is commonly lost sight of is that there must be latent characteristics in the chromosomes to respond to stimulation. One devoid of tonal or rythmatic factors can never become a musician, no matter what effort may be expended in that direction; lack of mechanical aptitude foredooms to failure any attempt to become a mechanician.

With latent aptitude, that is, potential factors in the chromosomes, astonishing results are often achieved. Expert wine and tea tasters have, by practise, so strengthened and differentiated their latent taste patterns as to be able to discriminate between different samples, and to name correctly the vintage, place of production, and quality of wines, or the species and purities of teas. If the exist-

ing factors in the chromosomes had not been aroused and associated into patterns, by repeated exercise, such results would be impossible.

The patterns formed in any individual are necessarily different from those formed in any other individual, because of the factors with which they have been endowed, and by the experiences through which they pass. Such patterns are untransferable; it is impossible for any one to have identical patterns with another; suppose I am describing an object and name "red" as one of its characteristics; if you happen to be blind to that color the word will arouse no corresponding pattern and you would have no conception of its meaning, any more than you could form a conception from a word in a foreign tongue with which you were unacquainted. If you are not color blind to red, you will form your own particular pattern of red, but how near or how far from agreeing with my pattern of red can not be known; both have been trained to associate the word red with a pattern formed by the stimulation of the optical nerve by certain vibrations of light, but as the factors in the nerves are never alike in any two persons, it follows that the patterns will be different to the same degree. This condition is true of all the senses, as every one knows who has observed the so-called acuteness of individuals, with respect to any of them, such acuteness being nothing more than the distinctness of the formed patterns.

These facts demonstrate that no two persons live in the same world, or respond alike to identical stimulations. They carry the further implication that the kind and quality of the factors with which any one is endowed depend upon the chromosomes inherited from his ancestry, and that the development of those factors depends upon the training and the experiences through which the individual adds to or modifies his original nature; in short, no man can

be other than what his heredity and environment have made him.

It is quite evident, also, that identical training and experience, if such were possible, would produce different results in different personalities, because of the dissimilarity in blending the chromosomes in the parents.

The natural trend of inherited patterns is curbed by education, training, and experience, and these features work together to form new patterns from the original factors, which, when strongly emphasized, form new cells for more powerful reactions.

Those poorly endowed with the higher characteristics, or who, in a limited environment, lack education and training, form restraints only through fear of sickness, punishment, loss or death, and acquire new forms only through the primal desire for approbation; a desire that develops leaders of the gang, and is also the irresistible black-jack of Marm Grundy.

The successful man is he who has been endowed with characteristics that lead to a definite goal, and who cultivates these characteristics until they become the ruling motive of all his activities. Such a man will be a positive force in his line; he will be able to decide, intuitively we say, because of the power of the cells he has developed, which function automatically. This does not hold good in activities outside of the chosen line; it is a common mistake to assume that a man making good in one endeavor will be equally good in a dissimilar one. This was the grave error committed in the selection of the dollar-a-year men during the early days of the late war. Every man to his trade is a sound maxim.

That this must be so is readily understood when it is recognized that only by continued exercise of dominant characteristics can cells be developed to a state of effectiveness. It is only when patterns form automatically that

they produce perfect results. We see this in the acquiring of the technique of any art; the first attempts are bungling and inefficient, it is only when the patterns are so well organized as to form spontaneously that good results are obtained.

Some natures are well furnished with factors of related qualities, and are given wide opportunities in training and experience; these become the thinkers, the so-called brainy people of the world. Others are richly endowed with special factors that compel them to devote their lives to manifesting their peculiar patterns or passions; these are the geniuses of the ages. Again, others are so niggardly endowed, or are so restricted in opportunities for training and experience, as to cause a dearth of cell formation, and lack of patterns, these become the dullards, the morons, who are incapable of reaction to other than the grosser physical features of life, who are condemned to grovel among the animal patterns derived from their ancestors. There is still another distinct class of natures; those that have inherited abundant characteristics of divergent kinds. Many highly-endowed men are poorly constituted to succeed in life; they are subjected to so many conflicting patterns, without predominance in any one line, that they must qualify every assertion with many ifs, and their internal conflicts cause irresolution; they are cursed with a too great wealth of factors in their chromosomes.

As human beings have passed through the slow and tedious process of evolution; as they have struggled against their environment; as they have rubbed up against each other; as they have exchanged knowledge; they have been forming patterns in great variety, and cells of increasing sensitiveness. This has enabled them to evolve better means for preserving and enriching life. The primal brutish patterns are better restrained, by activities in acquired characteristics, but the time for their effective

working is a vital factor; the brute appears whenever the higher characteristics lack time or opportunity to form opposing patterns.

III. HYPOTHESIS OF THOUGHT

From the established facts in the two preceding papers we may form a theory to explain the thinking process, which may be tested by giving attention to one's inner reactions to outward stimulations. It must be borne in mind that patterns, or images, can be formed only through experiencing the effects of the outward world; no one can THINK of anything until some outward stimulation, acting upon the nervous system, has prepared a basis for cell activity. Clearness of patterns, and of the resulting THOUGHT, depends upon the congruity of the involved factors; if of analogous character, without opposing elements, a strong and direct effect will be produced and the THOUGHT will be strong and clear; if incongruous elements are present, or a great many experiences striving for dominance there will be indistinctness, uncertainty in THOUGHT and irresolution in action.

The form in which a "thought" appears will depend upon what factors, or patterns, are dominant; to repeat, some sensory nerve is exteriorly directly agitated, the nerve filaments polarize back to their connected cells, gathering force, or being restrained, by synchronizing or associated elements in the inherited or acquired characteristics; reaching the related cells, the energy is transferred to the negative motor cells and transmitted by their nerve filaments to the muscles, where positive action takes place. If this

theory holds true, and it has been established that every nerve and muscle activity is accompanied by electrical manifestation, we may form a logical explanation of THOUGHT.

It is erroneous and conducive to misapprehension to say that thought ever directly causes action; it would be the greatest miracle, for, as we have seen, action comes only from the functioning of the sensory and motor nerves; both the action and the thought are concomittant results, which arise from nerve activity.

When sensory nerves are exposed or hindered in normal action, there is an awareness of the conditions through pain, but the pain reaction is often overborne by superior activity of other patterns; beatific visions made the martyrs anaesthetic to the pain from burning faggots; Sir Walter Scott lost apprehension of great bodily discomfort when absorbed in the composition of his stories; Dr. Carpenter lectured in comfort at times when jagged calculus was tearing his kidneys, though it utterly prostrated him as soon as his subject ceased to engross his attention; almost every one has experienced the cessation of a toothache, when fear of the dentist becomes powerful enough to inhibit the action of the pain nerves.

This awareness is but a sensitiveness to conditions. When a muscle is in action it gives off heat and electricity; its substance is consumed and it demands replenishment; the blood rushes in to supply the needed elements and to carry away the ashes of combustion. We feel these alterations in conditions, particularly when the effort produces perspiration or the sapping of the muscle fibres causes loss of energy. The same results must ensue from the functioning of the nervous system, which is but a development from the coarser material forms of matter; there is the same impairment of substance, the same release of heat and electricity, the rush of blood to make

good the loss. When a muscle is exhausted it ceases to act; hold the arm in horizontal position for a time and the dissipation of muscular energy causes it to fall. Occupy specific nerve cells for a sufficient length of time and they too will cease to act, and the awareness, or thought, disappears. Stir the cells responding to the stimulation of red to an exhaustion point and they will cease to reflect that color, but the complimentary color cells, relieved of their overshadowing associate, will cause an awareness of the other color, until their more feeble activity becomes exhausted. Every one realizes the futility of concentrating on a subject when the vitality of the cells that appertain to it has become exhausted.

Our so-called state of mind, can be no other than an activity in the nerve cells sufficiently strong to produce an impression upon the senses, weaker ones constituting the phenomenon known as the sub-conscious, a term imperfectly understood, and applied to fantastical notions. Every organized impression is the result of combined cell activities, such combinations have been given the name, "neural patterns," by the psychologists, and this is the significance of the word pattern as used in this thesis.

A flash upon the optic nerve, a shock to the auditory nerves, a strong excitement of any one of the senses, will form patterns so strongly organized that they will re-form to the day of death, upon the slightest provocation. On the other hand, patterns formed through the slow process of training are transitory and can be maintained only by continued effort. Much of school training fails to maintain its patterns; only those in constant use are preserved, and sans patterns, sans thought.

Cast out all prejudices and preconceived notions, then pay particular attention to what goes on in your mind as you read the following cases, and the hypothesis may form corroborating patterns in your nerve processes.

A crashing noise assails your auditory nerves; if previous experience has not associated the sound with other factors no pattern will be formed and you can not THINK what it means; you rush to the door and there your optical nerves are assailed and instantly set a whole chain of cells in activity, patterns are formed through which you become aware that a trolley car has collided with an automobile; at once all the nerve centers that have ever been aroused by contact with trolley cars, automobiles, or accidents, are sympathetically excited and pattern after pattern follows and you THINK accordingly; such activity may resurrect patterns that were formed in years gone by and you will say, "I remember so and so."

An odor comes to the olfactory nerves; the resulting cell activity induces activity in other cells that had previously associated and presto! "thoughts" of by gone days appear. Attending to the images that the patterns impress upon the consciousness, brings back past experiences, and instances are recalled that had been apparently forgotten it is then realized that every pattern has the latent possibility of reformation and memory is simply explained. The only difference between memory and sub-consciousness is that the latter is composed of patterns, or parts of patterns, that lack the power to make an impression strong enough to be recognized.

It often happens that an old-time pattern will be so strongly aroused by a present experience as to seem part and parcel of it. From this fact, come those surprising differences in the testimony of honest witnesses as to the facts of any occurrence. Lapse of time contributes to this jumbling of patterns, for in the associated activities of the cells, it becomes more and more difficult to separate the details belonging to different experiences of the same kind; one may have an image of what appears to be a specific instance when it is in reality a composite of many instances.

One may, by repeated formation of a pattern, transform a fanciful into a seeming actual impression. "He has told it so many times that he has come to believe it himself," is a common expression.

If this hypothesis approximates the real foundations of THOUGHT, and there is abundant evidence to show that it does, then the present method of educating the young needs reconstruction. The patterns should be created solely from absolute facts; theories should not be taught as facts, but given in a manner that will permit a doubt pattern to form in conjunction with the theory pattern.

An analysis of the inner forces that produce the effects of what is named, WILL, CONSCIENCE, ATTENTION, and other phases of nervous reactions, will demonstrate that all of them have their basis in the natural reactions of the forces of life to environment. These phases of the nervous system will be taken up in succeeding papers.

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PUGNACITY

IN SOCIAL PSYCHOLOGY, most of us can adduce explanations for the most complicated phenomena; excepting perhaps those who try to understand the real causes of the behavior of man in society. Politicians, publicists of all sorts, and novelists utter their opinions on problems in social psychology involving the most complicated interactions of human institution and human beings with an air of certainty so impressive that the ordinary man is apt to think that their knowledge of such things is absolute. Yet, directly, a real attempt is made to comprehend any social institution whatever, in all its bearings, one is immediately launched out into a sea of difficulties.

It is high time that we took seriously to this branch of learning, for some problems of grave importance await, nay clamor, for solution. Our civilization is racked from end to end, from top to bottom, with convulsions, all ultimately capable of explanation in terms of psychology, and either curable or in the very nature of things, unavoidable. One of these problems is that of War.

We have lately gone through years of agony, in which great states have been ranged against one another in a struggle for supremacy. But how few have thought deeply about the causes of this tremendous conflict. It has cost the world many millions of lives, the loss of an infinite amount of happiness for all of us, and great stores of treasure; and it has left in its wake a sea of troubles that will take many years to calm. Yet this tremendous conflict has not, so far as I am aware, been seriously considered

as a problem in social psychology. What is it in man or in society that causes him to fight? The amateur psychologist utters the magic word, "Human Nature" and looks around triumphant for the applause of the audience: "It's in human nature to fight, my boy, and you'll never get any one to do otherwise. What would you do if a man were to hit you? Why, you'd hit him back"; completely ignoring the fact that the thing to be explained is not your retaliation but the aggression of your adversary.

We live in a continent which has been the scene of incessant struggle ever since the beginnings of history. When the curtain goes up on the first act of the drama, the actors are engaged in cutting one another's throats in the same way as they have since continued to do so in this, the most enlightened area of the earth's surface. From that our historians, divines, politicians, and writers and—I am ashamed to say—scientists conclude that warfare is inevitable, and that warlike struggles have brought to the front the races best fitted to survive. Our pride is that we come of a fighting stock: that is counted to us for righteousness, by ourselves at least. And numberless volumes have been written on the theme of the Struggles for Existence as the producer of the best and most virile types, the struggle being carried on by means of warfare whereby whole communities indulge in a process of extermination that finally leave the most efficient in triumph. Many would say that "we have fighting in the blood"—whatever that may mean—and would claim that it is ineradicable. They would say that we have an instinct of pugnacity that causes us to fight, just as we have an instinct that prompts us to eat when we are hungry. This common frame of mind has ever influenced those whose business it is to guide us in these matters. For it is well known, to ethnologists, at least, or it should be well known, that numerous peoples on this earth in a very low stage of culture are quite peaceful. But

the existence of these people being inconvenient to views current among us, such people must be explained away by those who are forced to recognize their existence. So we have the spectacle of an eminent ethnologist recognizing their existence, but brushing them on one side as what he terms "by products" of human evolution, who presumably have only value as museum specimens for ethnologists, that must be studied "for the purposes of an all-embracing science—as well as for pity's sake," and whose high moral standard is characterized an "unmorality," just as if these people had not a most valuable lesson to teach us in demonstrating the fact that it is possible for man to live without fighting. I do not see why we should pity people who live happy peaceful lives. I should rather have thought that we should envy them. We have not too much to be thankful for in a civilization which makes it for many a burden to live, surrounded as we are by numberless hateful by-products of the social circumstances in which we exist. But let that pass. We can leave on one side such utterances and proceed to the consideration of more serious statements with regard to this so-called pugnacity of man.

One would expect to find that scientists of repute who give utterance to similar sentiments would have made a careful and exhaustive study of the facts on as large a scale as possible. As the result of search, I have only been able to find one writer who has taken the trouble to produce a scheme to explain how the so-called instinct of pugnacity could have functioned in the development of our present form of social organization and behavior. That man is Professor William McDougall, the author of *An Introduction to Social Psychology*.¹ The wide circulation of this volume, and the fact that Prof. McDougall has not found it necessary as the result of criticism to alter his views in

¹ My quotations are from the Second Edition of 1909. So far as I am aware, Professor McDougall has not since modified his statements.

eighteen or so successive editions, raises a presumption that his views are accepted as representing the nearest available approximation to the truth. I shall assume that the views of Prof. McDougall are widely accepted, and shall therefore proceed to the examination of them with the greater confidence. Prof. McDougall's views merit serious attention for another reason. He has not only formulated a psychological scheme, but he supports it with facts drawn from existing races of men of whom he has first-hand knowledge. That being the case, let us see what he has to say about this supposed ineradicable tendency of man to fight his fellows. He begins by defining the instinct of pugnacity—or rather, by defining its place in social evolution. "The instinct of pugnacity," he says, "has played a part second to none in the evolution of social organization" (279), and "its operation, far from being wholly injurious, has been one of the essential factors in the evolution of the higher forms of social organization, and, in fact, of those specially social qualities of man, the high development of which is an essential condition of the higher social life." (281-2.) So this instinct is going to do a great deal for us in the development of social life, and therefore its workings must be watched with the greatest care.

What is an instinct? "An instinct is an inherited or innate psychological disposition which determines its possessor to perceive, and to pay attention to, objects of a certain class, to experience an emotional excitement of a particular quality upon perceiving such an object, and to act in regard to it in a manner, or, at least, to experience an impulse to such action." (29.) So when I observe a member of the opposite sex, I tend to behave in certain ways, often very subtly disguised. Or the sight of food when I am hungry has certain definite instinctive consequences in me. But what is the object that excites my

instinct of pugnacity? For the best part of a hundred years we were taught to view Frenchmen with disgust, to look upon them as our hereditary enemies. But now they are—officially speaking—our dearest friends. How comes it that our instinctive desire to fight the French has changed into violent friendship with them? What class of person do we habitually desire to hit in the eye or otherwise maltreat? We turn to Prof. McDougall to help us out of our difficulty and ask him for his definition of the instinct of pugnacity and some account of its workings. The answer we learn with surprise, is that it is not really an instinct at all, but only a sort of instinct. He says, "it occupies a peculiar position in relation to other instincts, and cannot strictly be brought under the definition of instinct. . . . For it has no specific object or objects the perception of which constitutes the initial stage of the instinctive process. The condition of its excitement is rather any opposition to the free exercise of any impulse, any obstruction to the activity of which the creature is impelled by any one of the other instincts. And its impulse is to break down any such obstruction and to destroy whatever offers this obstruction." (59-60.)

So apparently the only means whereby a man can be made to fight is to try to stop him from doing something that he wants to do. If I am attacked by a gang of hooligans, the explanation of their conduct would be that I am in the way of their getting my money and therefore their instinct of pugnacity causes them to hit me on the head. Or, when Germany's rulers declared war it was because other countries prevented them from grabbing everything within sight. It is evident, I think, that this definition would require some qualification if it were to apply to all kinds of human combat. Other causes certainly lead men to fight each other than the obstruction of their impulsive or instinctive actions. I do not propose to discuss this dif-

ficulty but rather to examine the complete scheme of Prof. McDougall, leaving the elucidation of such points to the end, if it be necessary.

Professor McDougall puts forward two distinct explanations of the manner in which the pugnacious tendencies of man have influenced social development. He assumes in the first place the same primordial form of society as Messrs. Lang and Atkinson in their work on *Primal Law*. He says that men formerly wandered about in bands consisting of a male and his wives. The sons were expelled by the father when they got to puberty. When arrived at maturity they tried to capture wives from their sire, usually with painful consequences if he was still vigorous. Thus, they came to develop prudential restraints, and avoided direct conflict with their father as far as possible. They got their wives by strategy. It is curious that scientists often overlook homely aspects of problems. I do not see any necessity at all for the claim that the young men had to capture their wives. Surely the young wives would prefer the young men to the old ones, and would elope with them. This idea of Lang and Atkinson is based upon the form of marriage that has not yet been explained, in which the relatives of the bride pretend to prevent the friends of the bridegroom from carrying off the bride. This is another example of the premature attempt to explain the real meaning of social institutions or behavior. I would pass over this scheme of Prof. McDougall without comment, for it is founded upon a hypothesis not merely unverifiable but contrary to the known facts, were it not that he appears to me to have been led thereby into a serious contradiction. He says that men, by the means just outlined, came to control their impulses. That being so, how are we to explain his words in another part of the book where he states that the instinct is probably "stronger in the European peoples than it was in primitive man"

(279), unless it be that the instinct grows on repression.² Since, however, the logical foundations of the theory on which he relies are faulty, there is not much need to discuss this point. We will proceed to examine the next step of the general argument. We have left the problem of individual conflict in an unsatisfactory state, but must press on to the conflicts of communities.

There are two sorts of combat, individual and collective. According to the definition, pugnacity is called into being by the obstruction of impulsive or instinctive action. That is easy enough to understand in the individual, but what are we to make of it in the community? Prof. McDougall opens his exposition with the following statement. "When in any region social organization has progressed so far that the mortal combat of individuals was replaced by the mortal combat of tribes, villages, or groups of any kind, success in combat and survival and propagation must have been favored by, and have depended upon, not only the vigor and ferocity of individual fighters, but also, and to an even greater degree, upon the capacity of individuals for united action, upon good comradeship, upon personal trustworthiness, and upon the capacity of individuals to subordinate their impulsive tendencies and egoistic promptings to the ends of the group and to the commands of the accepted leader." (287.)

It is exactly in such cases as these that the ethnologist is bound to utter the most vehement protests. Just consider the nature of these statements. Prof. McDougall has just left us with the primal horde led by a father, with the sons hovering on the outskirts waiting for the chance to snatch a reluctant wife from his toils. He then tells us that in the interval between the last act and the one on which the curtain is about to rise, mortal combat between individuals has gone, so that the people are "very intelli-

²And, again, how is the development of the instinct in women to be explained on the basis of this theory.

gent and sociable and kindly to one another within each village community" (280), but extremely pugnacious towards those of other villages. The villagers individually are peaceful, but the village itself as a group is extremely pugnacious. How is Prof. McDougall going to jump this tremendous gulf? It is no good shutting your eyes to the existence of this gulf. From the point of view of social psychology it is imperative above all things to explain how it is that this form of social organization came into being, and how it succeeded in so acting on the individuals as to suppress individual mortal combat, if such a thing ever existed except as a mere sporadic occurrence. You have got to explain how individual men, instead of wandering about with their groups of wives, came to live together in harmony, to subserve their ends to the common good, to become trustworthy, and so on. And yet this tremendous step is made without any comment. But let that pass. Prof. McDougall says that the instinct of pugnacity has developed the higher social habits, making people kindly, sociable and so on. And yet, as he says, the pugnacious instinct is probably stronger in civilized man than among primitive savages. How can an instinct annihilate itself and yet become stronger? How can it make people sociable and kindly, and yet, at the same time, bring it about that, in the words of Prof. McDougall, "when a pugnacious people is forcibly brought under a system of civilized legality, its members are apt to display an extreme, and to our minds, absurd degree of litigiousness." To say the least of it, this does not sound very much like the sociability and kindliness that he claims to have been produced by their pugnacity. (279.)

Let us leave that difficulty with the others and press on with the scheme of Prof. McDougall. Suppose that communities of savages, indulging in individual mortal combat because they cannot do what they like, come in some way

to sink their differences, to live together in harmony by restraining their increased pugnacity, and to devote their energies to struggling village with village, "like a roomful of quarrelsome children," as Prof. McDougall graphically puts it. Fresh difficulties now arise to confront us. Pugnacity is an innate form of behavior, only now in the collective sense, for it has been restrained in the individual sense. It is excited by the obstruction of the free exercise of some impulse. That is to say, pugnacity now being collective, if an impulsive or an instinctive process of the community is interfered with the community becomes angry and fights.

Can we say that a community has an impulse or an instinctive desire to do something? It is possible that, by bringing in the "Group Mind" of which Prof. McDougall is an exponent, we can claim that the community has a collective frame of mind at any given moment that causes it to have impulses. But it must be remembered that this frame of mind has to be collective. We cannot say that when an individual has his impulses or instincts thwarted he would fight. He has learned to "subordinate . . . impulsive tendencies and egoistic promptings to the ends of the group and to the commands of the accepted leader." In that case, if the accepted leader gives the word to fight, is it because he himself has had his impulses thwarted, or because he is simply voicing the feelings of the group? If he is simply voicing the feelings of the group, can he at that moment be called a leader? If the members of the group are subordinating their egoistic promptings to the ends of the group, what is the connection between the leader and the group's desires? We seem rapidly to be nearing the metaphysical. In what way can the group have its instincts thwarted? We are forbidden to imagine that fighting can begin with the individual, because he has ceased to fight as such; we cannot imagine how the whole community

can be hindered in their impulses; we are told that the commands of the leader are to be reckoned with. What, therefore, are we to think of the matter? It would seem, indeed, as if the scheme had got into a logical tangle, and that to set it right we should have to go back to the beginning and examine each step afresh. But in view of the fact that Prof. McDougall supports his theory with practical examples, it might be well first of all to see what evidence he has to support his contentions. Radical criticism, if necessary, can be reserved till the scheme is complete. Prof. McDougall says, "These results of group-selection produced by the mortal conflicts of small societies, and ultimately due to the strength of the pugnacious instinct, are very clearly illustrated by the tribes of Borneo. As one travels up any one of the large rivers, one meets with tribes that are successively more warlike. In the coast regions, are peaceful communities which never fight, save in self-defense, and then with but poor success; while in the central regions, where the rivers take their rise, are a number of extremely warlike tribes, whose raids are a constant source of terror to the communities settled in the lower reaches of the rivers. And between these tribes at the center and those in the coast regions are others that serve as buffers between them, being decidedly more bellicose than the latter, but less so than the former. It might be supposed that the peaceful coastwise people would be found to be superior in moral qualities to their more warlike neighbors; but the contrary is the case. In almost all respects the advantage lies with the warlike tribes. Their houses are better built, larger and cleaner; their domestic morality is superior; they are physically stronger, are braver, and physically and mentally more active, and in general are more trustworthy. But, above all, their social organization is firmer and more efficient, because their respect for and obedience to their chiefs, and their loyalty

to their community, are much greater; each man identifies himself with the whole community and accepts and loyally performs the social duties laid upon him. And the moderately warlike tribes occupying the intermediate regions stand midway between them and the people of the coast as regards these moral qualities. Yet all these tribes are of closely allied racial stocks, and the superior moral qualities of the central tribes would seem to be the direct result of the very severe group-selection to which their innate pugnacity has subjected them for many generations. And the greater strength of their pugnacious instinct, which displays itself in their martial bearing and more fiery temper, is probably due to the more bracing climate of the central regions, which, by favoring a greater bodily activity, has led to more frequent conflicts and a stricter weeding-out of the more inoffensive and less energetic individuals and groups." (288.)

Prof. McDougall has now supplied us with a definite scheme, founded on ethnological facts, which therefore demands careful attention. Ultimately pugnacity is, he says, probably a matter of climate. Its effects, produced by warfare, with a consequent group-selection, are moral. Yet this scheme is not clear. How comes it that a process that weeds out the "more inoffensive individuals and groups," has at one and the same time eliminated individual combat and replaced it by group conflict? If you weed out the more inoffensive groups, it is easy to understand that more offensive groups are left. But how does the weeding out of the more inoffensive individuals do away with individual mortal combat? It would seem that mortal combat should in this case become more frequent. The process is working in opposite directions at once.

Let us examine the facts upon which these assertions are based. Naturally, one desires to know more of these groups of peoples with their varying degrees of pugnacity,

culture and behavior. It is fortunate that Prof. McDougall has so chosen his material that we can study it in a work that bears his name. In a conjunction with Dr. Hose, he is the author of a work on *The Pagan Tribes of Borneo*, in which he discusses the culture of the peoples just mentioned. According to the scheme the most peaceful peoples are on the coast. So let us turn there to see what they are like. Confining ourselves to Sarawak, the region treated of by the authors, I suppose that the old coastal State of Brunei is not included in the scheme, for this state certainly has been warlike. Among what are called the Pagan Tribes we come first of all to the Sea Dyake or Iban, who are near the coast. "They are most densely distributed in the lower reaches of the main rivers of Sarawak." (I. 31.) As to their peaceful nature, they are said to have a "restless truculent disposition. . . . They are quarrelsome, treacherous, and litigious, and the most inveterate headhunters of the country." (32.) We thus receive two distinct shocks. To start with, we were told that the most peaceful peoples were those on the coast. We find some at least of the coast tribes to be the most pugnacious and quarrelsome of all. Moreover, "they have little respect for their chiefs," and that, together with their quarrelsomeness, hardly bears out Prof. McDougall's idyllic picture of the warlike tribes with their "respect for and obedience to their chiefs." I think that Prof. McDougall must have forgotten the Iban when he wrote that account. Let us, however, leave the Iban and travel up the rivers in search of the really warlike peoples of the interior. They are the Kayans. Of them Hose and McDougall say, "The Kayans are perhaps less aggressive than any other of the interior peoples." (I. 158.) . . . "Nevertheless, prowess in war has made them respected or feared by all the peoples . . . the Kayans do not wantonly indulge or engage in bloodshed, yet they will always stoutly assert

their rights, and will not allow any injury done to any member of the tribe to go unavenged. The avenging of injuries and the necessity of possessing heads for use in the funeral rites are for them the principal grounds of warfare; and these are generally combined, the avenging of injuries being generally postponed, sometimes for many years, until the need for new heads arises. . . . Kayans seldom or never wage war on Kayans, and seldom attack others merely to secure heads or in sheer vainglory, as the Ibans not infrequently do. . . . War is generally undertaken by the Kayans very deliberately, after much preparation and in large well-organized parties, ranging in numbers from fifty to a thousand or more warriors . . ." (158-9.) Before considering the positive statements that this account contains, it will be well to examine its bearing upon Prof. McDougall's general theory. We may well ask: Where in all this is there any sign of the effects of the "more bracing climate" of the interior producing an exuberance of feeling and bringing about a group selection that weeds out the less offensive individuals and communities? Where are the extremely warlike tribes, whose raids are a constant source of terror to the other tribes? We are expressly told that the Kayans are less offensive than the other tribes of the interior. So the two pictures do not tally. In one place we are told that the peoples are in a constant state of turmoil, squabbling like a roomful of quarrelsome children, and in another place that the most warlike are the least pugnacious. They put off their expeditions for years, and only really go on the warpath when the need arises. Where in the account of the Kayan warfare is there any sign of the instinctive process of sweeping away obstacles to the exercise of impulses, or of sudden outbursts of anger? The combination of "most warlike" with "least aggressive" is not compatible with the claim that the instinct of pugnacity has been developed by

warfare to such a pitch that "the most serious problem of modern statesmanship is, perhaps, to discount and control . . . outbursts of collective pugnacity." (281.) These Borneo warriors manage to control their anger for years, not from motives of prudence, for they could strike when they wished, but for other reasons which Prof. McDougall has revealed to us.

What is the nature of the mortal combat of groups that has raised the Kayan to so high a moral level? We turn again to the work of Hose and McDougall. Borneo warfare consists mostly of ambush. The village to be attacked is surrounded and the assault made before dawn. The attackers try to set fire to the long house in which the village lives. Then, we are told, if the house is ignited, the encircling assailants strive to intercept the fleeing inhabitants. These, if the flames do not drive them out before they have time to take any concerted measures, will hurl their javelins and discharge their firearms (if they have any) at their assailants; then they will descend, bringing the women and children with them, and make a desperate attempt to cut their way through and escape to the jungle, or, sometimes, to their boats. Kayans conducting a successful attack of this kind will make as many prisoners as possible, and will as a rule kill only those men who make desperate resistance, though occasionally others, even women and children, may be wantonly killed in the excitement of the moment. It is not unusual in the case of an able-bodied man who has surrendered, but shown signs of attempting to escape or of renewing his resistance, to deal him a heavy blow on the knee-cap, and so render him lame for some time. It usually happens that the greater part of the fugitives escape into the jungle; and they are not pursued far, if the victors have secured a few heads and a few prisoners" (I. 173) . . . it is a rare exception for Kayans to kill any of their captives after the short

excitement of the battle is over." Generally speaking in fighting, "Unless one party quite overwhelms the other in the first few minutes, both draw off, and the fight is seldom renewed." (182.)

It is possible to describe this skirmishing as mortal combat between communities; but if so, it would seem that a great time must have been necessary for the selection of the more warlike communities to have taken place. In this account of the warfare of the Borneo peoples we see no trace of any bloodthirstiness such as has been ascribed to savages and has been held to differentiate them from civilized men. The Kayan fighting seems to result in very small casualties. Kayan does not fight Kayan, and the Kayan are stronger than other tribes and therefore usually beat them. If the Kayan have superior moral qualities they should have undergone the more severe group selection, but this cannot be the case. The more pugnacious of the peoples, who, it would be assumed, have undergone the more severe selection, have the lower social qualities. It may be, of course, that the Kayan have learned to control their pugnacity, but it is hard to see how this could have worked. Prof. McDougall's scheme therefore does not seem to take us any further than we were at the beginning. On the contrary, it lands us in all manner of fresh difficulties. But there is yet another lurking in the background. We have been told that the greater pugnacity of the Kayan is probably due to the more bracing climate of the interior. Yet the Iban of the coast are much more pugnacious, and they have not the advantage of climate. True, they came from elsewhere a few generations ago, and perhaps have not yet worked off their exuberance. But if we consent to let that matter pass we are met with another difficulty. For Prof. McDougall ascribes the high moral and social standard of the Kayan to their warlike qualities. So apparently people with no such past as the Kayan would not

have these qualities. Yet in the work of Hose and McDougall we are told of peoples who live in the bracing uplands and yet have managed to resist the temptation to indulge in mortal combat, either as individuals or communities. These people are hunters and food gatherers, with no settled homes. These "harmless nomads" as the authors call them live on friendly terms with the Kayan, so like a "roomful of quarrelsome children." And "from the point of view of physical development" the Punans (their name) are among the first of the peoples of Borneo. "The Punan," we are told, "is a likeable person, rich in good qualities and innocent of vices. He never slays or attacks men of other tribes wantonly; he never seeks or takes a head, for his customs do not demand it; and he never goes on the war-path, except when occasionally he joins a war-party of some other tribe in order to facilitate the avenging of blood. But he will defend himself and his family pluckily." As regards his social behavior, "public opinion and tradition seem to be the sole and sufficient sanctions. . . . Within each group harmony and mutual helpfulness is the rule; each shares with all members of the group whatever food, whether vegetable or animal he may procure by skill or good fortune. . . . Intellectually, although in culture he stands far below all the settled agricultural tribes, there is no sufficient reason for assuming him to be innately inferior in any considerable degree whether morally or intellectually."

The facts quoted from the work of Prof. McDougall provide many and serious difficulties for his theory of the workings of the instinct of pugnacity. After trying in vain to understand how mortal combat between individuals had given rise to the social qualities of prudence and self-restraint; and how it had, in that process, produced in its place group-conflict, the more pugnacious groups having the better qualities—we are now faced with the proposi-

tion that any sort of conflict at all is unnecessary for the development of the higher social qualities, for entirely peaceful communities possess them in full measure. We find a perfectly peaceful, nomadic, democratic people exhibiting the highest form of social behavior to which we can point on this earth, people who are to be studied "for the purpose of an all-embracing science—as well as for pity's sake," who nevertheless are on the same intellectual and physical level as their cultural superiors. It seems that the scheme of Prof. McDougall will not stand, for it is not in accordance with the facts as recorded by himself, let alone with logic. We have seen no sign whatever of any development of social qualities as the result of group-conflict. On the contrary we have found the most aggressive people given the worst character, and the least aggressive people given the best character. The maze of complexities in which we are involved invites a quick means of escape. One feels inclined to begin again without the assumption of any instinct of pugnacity at all. The structure of argument is not sound and should be swept away.

There is no need for us to do this painful task. Prof. McDougall has done it for us. He ascribes all the higher social qualities of the most warlike people of the interior, the Kayan, to their warlike history in the bracing climate of the uplands. The superiority gained in this school of experience even extended to their houses. We are definitely told that all this was due to their history as a fighting race in the middle of Borneo. But judge of our surprise when we read in the work of Hose and McDougall that the Kayan, this great warlike people, did not originally belong to Borneo at all, but came there in the fourteenth century, and having entered the island in the southwest have gradually been working up to the interior. Therefore they could not have been long in the bracing uplands. These

invaders are said by Messrs. Hose and McDougall to have brought their higher culture with them. They say "the higher culture of the indigenous tribes of the interior has been introduced by invasions of peoples . . . who have penetrated widely into the interior and mingled intimately with them." The Kayan are said to have played an important part in this civilized mission (231). The other tribes that live near them, grouped under the terms Kenyah and Klemantan, are said by the authors of this work to have got their culture from the Kayan, and to have been raised by them from the status of the nomadic Punan. Let the authors speak for themselves. They say: "We have now to summarize the evidence in favor of the view that the Kayans have imparted to the Kenyahs and many of the Klemantan tribes the principal elements of the peculiar culture which they have now in common. We have shown that the culture of the Kenyah and Klemantan tribes is in the main similar to that of the Kayans, and that it differs chiefly in lacking some of its more advanced features, in having less sharply defined outlines, in its greater variability from one community to another, and in the less strict observances of custom. Thus, the Kayans in general live in larger communities, each of their villages generally consisting of several long houses; whereas a single long house generally constitutes the whole of a Kenyah or Klemantan village. The Kayans excel in iron-working, in *padi* (rice) culture, in boat-building, and in house-building. Their customs and beliefs are more elaborate, more definite, and more uniform, and more closely observed. Their social grades are more clearly marked. They hang together more strongly, with a stronger tribal sentiment, and, while the distinction between them and other tribes is everywhere clearly marked and recognized both by themselves and others, the Klemantans and Kenyahs everywhere shade off into one another and into

Punans." (II. 243-4.) There can be no doubt as to the meaning of these statements. It is practically certain that this hypothesis of a cultural invasion is correct, and that the superior culture of the Kayan is to be ascribed to their historical circumstances. In the same way, the fact that the Iban or Sea-Dyaks have had a long history as the allies of the Malay pirates accounts for their bloodthirsty ways.

I have gone into this matter rather deeply and followed up the argument of Prof. McDougall to the very end with the aim of showing as clearly as I could the failure of any *a priori* scheme to account for the social institution of warfare. In this case, we have been fortunate in that the propounder of the theory has at the same time supplied the facts for its demolition. Indeed, he has played a foremost part in the process in the formulation of his scheme of the Kayan as an intrusive cultural influence. This removes any possibility for the claim that the critic has chosen his facts for the purpose and has ignored others that did not support the criticism. We have been supplied with full measure of material for criticism, and little argument has been needed.

It was only possible to discuss the theory of the instinct of pugnacity by leaving on one side the successive difficulties as they cropped up. Otherwise, very little progress would have been made. The fullest possible rope was given, and the result is evident. This discussion may appear merely destructive but it has its valuable side. It shows that the pure hypothesis of an instinct of pugnacity will not work. When put to the test it fails to explain anything. We are thus forced back upon the consideration of the social accompaniments of the practice to give some clue as to its real cause and psychological explanation.

There seems to be no doubt that warfare has been introduced to Borneo by the Kayan, Iban and other peoples, and that the indigenous peoples such as the Punan were entirely

peaceful until the arrival of these strangers. In considering the problem of war as presented by the Borneo peoples it seems that, taking the Kayan as the type, the real essence of the matter is the getting of heads and slaves. The heads are required by the Kayan for the funeral ceremonies of their chiefs and for agriculture. The Kayan differ from the Punan in having a chiefly class, while the Punan are democratic, being food-gatherers who go about in bands of relatives. Thus, what we are to explain, so far as Borneo is concerned, is why chiefs want heads at their funerals (I am ignoring for the present the agricultural aspect of the matter. It can be shown that the institution of chieftainship and agriculture are closely linked together in this region, but space does not allow of discussion of this point). The problem of war in this island is bound up with the chiefly class. For some reason, heads are required in connection with this class, the members of which also possess slaves. Accepting as true the claim that Kayan warfare is concerned only with these aims, it is apparent that the institution has not necessarily any instinctive basis at all, but may be the outcome of some purely intellectual process whereby men have become persuaded of the necessity of human heads for some purpose or other; so that, in seeking to get heads at certain intervals, they are acting according to their idea of cause and effect in the universe as they understand it. The description of Kayan warfare as given by Hose and McDougall shows that the aim is not to kill people, except in so far as their heads are needed, but rather to make a few prisoners. Their warfare is as far removed from the savage warfare of popular superstition as can be imagined. But above all it is bound up with a class of the community.

If space permitted it could be shown that the whole of the ceremonial accompaniments of warfare among the Kayan center round the chiefly class. It could moreover

be shown that the warfare of the East Indian Archipelago is mainly concerned with head-hunting, the heads being desired for funerals of chiefs and for agriculture. And the further we go into the facts the more evident does it become that the solution of the problem of warfare in this region depends upon the solution of other problems, and that it cannot be solved on its merits. Warfare in this region is simply the accompaniment of some other social institution or institutions.

If we think of warfare as an institution, it is evident that it must have had an origin somewhere. As far as Central Borneo is concerned the origin of warfare is coupled up with that of the Kayan as a community. They brought it in with them as part of their social possessions, and have taught it to the other peoples. We have not detected the real origins of the institution. Nor do we know why it persists, except that it, in the case of the Kayan, performs some useful function—that is, useful according to their ideas. But the secondary effects upon behavior of the institution itself are interesting. We have learned that the Kayan do not seek heads from their kinsmen, but choose other tribes. We learn further that they do not go on the warpath from motives of revenge. That is to say, it seems that men react to violence by violence. They do not necessarily react to a slight by violence. For instance, in the island of Buru in the East Indian Archipelago, there is no headhunting. If one village does an injury to another, runs over its land or kills some of its pigs, the injured parties do not do the others any personal harm, but go to their village and take away some pigs, clothes or some other possessions. Then the two villages have a joint feast with the pigs and the matter is at an end. But the usual reaction to violence is violence. For the Punan, harmless as they are, kill those who kill them. It is not hard to understand how the institutions of the

Kayan could stir up strife in Borneo. For if they went on their headhunting expeditions to other tribes, they would leave behind them revengeful feelings that might terminate in violence. This is certainly the case among some headhunting tribes. They keep a debit and credit account of the heads taken on either side and strive to keep the account balanced. Similarly, it can be shown that warfare among the North American Indians was enormously intensified after the arrival of Europeans by the fact that the French and English enlisted the tribes on their sides and set them at each other. Similarly Europeans are indirectly responsible for the ferocity of the Zulu and Matabele in South Africa. Europeans by their violence changed the Bushmen from friendly peaceful folk into implacable and cruel enemies. Once the institution of warfare has come into being it seems inevitable that it stirs up emotions and feelings that previously were not experienced. But these emotions bear no witness to the motive that led men to kill each other. It may have been the desire to obtain blood for ritual purposes, or some other cause, that first induced men deliberately to injure one another. But that the emotion of anger or an instinct of pugnacity caused the institution to come into being there is no evidence of which I am aware.

The possibility of explaining certain social institutions as functions of others opens up a vista in social psychology. In this budding science the problems at first sight appear to be beyond number, but this may be due to the point of view. The complexity may be read into the facts and not be there in reality. The suggestion that man is endowed with some innate tendency to fight his fellows fails to explain anything. Instead of finding fighting a mode of behavior common to all men, we find it definitely associated, in one place at least, with certain social institutions, in this case the class-system and agriculture. As to the

casual nexus between the class system and war, it is not necessary to speak here. The class-system may have given rise to fighting or fighting may have given rise to the class-system. But it seems probably that ultimately one will be expressed as a function of the other. So in that respect the main problem of social psychology is simplified. It is impossible to state the limits to which this process of inter-linking of institutions and behavior may go. It may well be that a thousand and one modes of behavior and institutions may be but the expression, the secondary effects of one original social institution, and that the removal of that institution will cause a transformation in social behavior. Ultimately, we may be able to reduce the problem of society to a few fundamental problems of psychology. But in the last analysis the problems of social psychology are reducible to those of the individual, and this fundamental truth must never be forgotten.

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CRITICISMS AND DISCUSSIONS

DOCTOR McTAGGART ON THE NATURE OF EXISTENCE

IT HAS LONG been known among students of philosophy that Dr. McTaggart was engaged on an elaborate revision of the system of ideas so powerfully expounded in his well-known earlier works. The result of the revision was long awaited with great interest and its first half now lies before us.¹ In some ways, if one may be allowed to make a remark which perhaps sins against the proverbial prohibition of looking gift-horses in the mouth, it is unfortunate that one-half of such a work should appear before the other. True to his old devotion to ontology, always an honorable distinction in these days of psychologizing metaphysics, the author undertakes to present us in this volume with the results which, as he holds, can be deduced from strictly *a priori* premises about the character of the real; for all further discussion of the more specific consequences which follow from the combination of these results with premises empirically known, we are left to await the completion of the book. As far as regards the main positions to be ultimately adopted the intelligent reader will not be in very much doubt. It is clear enough from the hints afforded us that we are once more to meet the main theses already familiar to us in the author's former works, the view that reality consists of a vast plurality of persons with no "supreme being" or "first cause" among them, the doctrines of the unoriginated and indestructible character of these persons, of the unreality of space and time and of the complete "determination" of everything. The main difference is to be that these views are to be established with special thoroughness by the argument that only if they are accepted will the universe or sum total of reality really have the particular logical and formal structure which the present volume aims at showing that it must have. If we take *x* as representing the meaning of "universe," the present volume in effect describes, or, in a wide sense of the word, defines, *x*; the sequel is

¹ *The Nature of Existence*, J. M. E. McTaggart, Vol. I, Cambridge University Press, 1921, pp. XXI, 509. 22s.6d.

to introduce us to *the x* which satisfies the description. The two volumes are, in fact, related much as a definition or a postulate and the existence-theorem which guarantees that there really is something answering to the definition or fulfilling the postulate are related in mathematics. The trouble created by the temporary absence of the second half of the work is that the reader may reasonably feel a doubt in dealing with the highly abstract account of the formal character of a universe whether there really is any object at all which satisfies it. If there is not, the final outcome of Dr. McTaggart's acumen and industry may prove to be that "universe" is after all only a name for the "null-class" of logic. In that case all that Dr. McTaggart has affirmed about the structure of the universe may, no doubt, be asserted, but may equally be denied. It is important, I think, that when the volume of empirical confirmation appears, the conclusions shall be established by arguments independent of the reasoning of the present half of the work. If that can be done successfully, it will be shown that "the universe of McTaggart" is a real object; if it should be argued merely that persons, e. g., must be what McTaggart maintains them to be, or that time and space must be unreal, because otherwise "the universe" will not satisfy the conditions now specified, this would not be fulfilled, the required existence-theorem will not have been demonstrated. Turning to the volume actually before us, the first thing which must strike a reader is the immense dialectical ingenuity and patience displayed in its production. It is as ingenious—and as difficult—as the second part of the Platonic *Parmenides*, and some ten or twelve times as long. And, unlike that famous work, it does not depend for its point on the perception that it is a prolonged and subtle jest. Dr. McTaggart's incidental illustrations often display a pretty vein of racy humor, but there is no mistaking the grim seriousness of his main purpose. Students of philosophy who have no enjoyment of dialectics as such had better be warned off *The Nature of Existence, Vol. I*, from the first. I can best describe the general character of the book by saying that it exhibits a curious combination of a metaphysical theory which, as one would expect, goes back to Hegel, and in a very real way also to Berkeley, with a method obviously inspired by the work of Messrs. G. E. Moore, Whitehead and Russell. We had long known that Dr. McTaggart does not admit the extreme claims which Hegel and some of his followers have made for the Hegelian dialectic as the only method in philosophy. This is

explained with particular fullness in the chapter of the present work where the author's own departure from Hegelian methods is justified. The "Triadic" movement, even if we grant its claim to be a method of reaching truth, has no claim to be the only method available. Moreover, Hegel's own description of it, as Dr. McTaggart has always maintained, does not do justice to the way in which in Hegel's own hands it shifts its character as we advance from the earlier to the later stages of its advance. In the later stages, the advance is less and less made through "contradiction," and more and more through supplementation. This is certainly the case, and since, as Mr. Bradley said long ago, no one can seriously quarrel with the law of Contradiction, it is as well not to pretend to do so. The substitution of the *mos geometricus* for the triadic method is certainly an improvement. It is, to be sure, another question whether you can really establish anything significant by the "geometrical method" if you insist in starting in a pure vacuum with nothing in the way of a given "datum" on which to work. I do not believe that any mathematician really does this, and I confess I share the general, possibly erroneous, conviction that a consistent "absolute" idealism at once ought to attempt the feat and is bound to fail in performing it, as the "Marburg School" notoriously have failed. That is, as it seems to me, just why every idealism which ever looks as though it could work may be found to involve a realistic assumption somewhere. (See on this point the acute criticisms of Adolf Levi's *Sceptica*.) Dr. McTaggart would perhaps not absolutely quarrel with this view, since he himself, with all his determination to be *a priori* in the present argument, finds it absolutely necessary to introduce one "empirical" and realistic premise, the proposition "something exists," which is held to be immediately guaranteed for every thinker exactly as Descartes maintained in the *First Meditation*. (The only other empirical premise admitted, viz., that "some substances have parts," the author believes to be strictly demonstrable *a priori*, and only uses "experience" to justify it for the reason that its appearance would otherwise have to be postponed to an inconveniently late stage of his argument.) There are, however, two features of Dr. McTaggart's reasoning which appear throughout to be open to serious criticism. One is that, owing to his avoidance of symbolism, the definitions of some of the most important terms employed strike me as highly ambiguous, and I am not sure that the author always escapes the ever-present danger of verbal fallacies

of ambiguity. If the "geometrical method" is really to be depended on, I believe it will be necessary always to conjoin with it an absolutely rigorous non-verbal symbolism, as is done e. g. by Frege and by Whitehead and Russell. Risk of ambiguity cannot, of course, be wholly eliminated by any device, but the modern developments of logic have at least made it much easier to detect by providing us with a much less ambiguous and briefer symbolism than that of words. My other difficulty is one of which I have spoken already. I do not, especially in view of the long and cumbrous verbal definitions employed, feel quite sure that there really are *definienda* corresponding to all Dr. McTaggart's definitions. In particular, I feel this anxiety very strongly about the notion of "determining correspondence" which promises to be the key to the structure of the whole universe. I am not satisfied, in the absence of Dr. McTaggart's second volume, that there really is any relation satisfying the six postulates by which this kind of correspondence is defined; indeed, I suspect, as will appear, that the whole of these postulates cannot be satisfied, or at least cannot be satisfied unless some of Dr. McTaggart's demonstrated results are denied. I am willing enough to be convinced that I am mistaken, but at present I feel the difficulty very strongly indeed. If the definitions had been accompanied by existence theorems one would either have had one's doubts dispelled or, if the demonstrations of these theorems could have been shown to be fallacious, have been so far confirmed in them. As it is, there is a great deal of Dr. McTaggart's book about which I feel, in homely language, that I do not know where I am.

I may proceed to make some comments on parts of the argument which strike me as calling for remark, without, of course, intending to imply that other things of which I say nothing are not equally deserving of careful attention. The salient points in the doctrine may, I think, fairly be summed up thus. "Real" and "existent" are terms, both incapable of definition, and of different signification, but their extension is identical. Whatever is real exists and whatever exists is real. On examination, real existence is found to consist of substances and their characteristics (the characteristics being either qualities or relations). It can be shown that there are more substances than one, and in fact that the number of substances is infinite, since the definition of substance adopted enables us to prove that a substance has an infinity of parts, all of which, in their turn, are substances. The qualities and relations of substances again form

simply infinite series. It can also be shown that the sum total or aggregate of all substances, the universe, is a single substance, and that all its characteristics determine one another mutually in a way which the author calls "extrinsic determination." Further, every substance of the infinite aggregate must have what is named a "sufficient description." But, owing to the fact that every substance is made up of an infinity of substantial parts which are made up again in the same way, and so on without end, this need for a sufficient description of every substance threatens to lead to an infinite regress, and this regress is a "vicious" one, as it entails the contradictory conclusions that every substance has, and yet that no substance can have, a sufficient description. The only condition on which we can escape this contradiction is to hold that the infinity of parts of substances are connected by the relation called by Dr. McTaggart "determining correspondence." Hence it becomes the main proposition which can be known about the universe *a priori* that its parts are so connected. We can conceive of more than one type of interconnection which would satisfy our postulates; what is the actual relation (or relations) which plays (or play) this part in the universe can only be determined finally when we introduce empirical considerations. But it is pretty plainly hinted that we are to find in the second volume that the relation which actually functions in this fashion is some kind of reciprocal immediate acquaintance between persons. I have omitted in this brief summary a great many issues of high interest on all of which Dr. McTaggart has things to say which repay careful study, but I believe I have indicated the principal steps of the main argument. Even these I cannot examine as I should wish, partly from sheer lack of the necessary qualifications, partly because to do the thing properly a volume as long as Dr. McTaggart's own would be required. But I hope I may be allowed to make a few remarks, even if I only succeed in exposing my own misconceptions.

I feel some misgivings even about the initial steps of the argument. Take, for example, the question of the distinction between reality and existence. The propositions "all that is real is existent," "all that is existent is real" are clearly regarded as important and they are clearly taken to be synthetic; both terms are taken as indefinable. If Dr. McTaggart had not regarded them as co-extensive, he could of course, have made us understand the difference in intention by producing examples either of non-existent reality or of unreal exist-

ence. As it is, I do not myself know what the difference between being real and existing is supposed to be, though I can see, of course, that Dr. McTaggart holds that there is a significant difference. This naturally leaves me wondering whether, after all, he really makes a difference or only supposes that he has made a difference, and I do not quite see how my doubt is to find a solution. In connection with the argument by which "propositions" or "objectives," commonly regarded as an example of something real but non-existent, are disposed of as an unnecessary fiction, I find more than one point of difficulty. I can see that McTaggart's view, which gets rid of propositions altogether and leaves us with "facts" on the one hand and "beliefs" (actually entertained beliefs which are, of course, existents) on the other, if it can be sustained, is a simplification. But is it clear that it may not be an over-simplification? I take it, what we apprehend in some perception would be regarded by McTaggart as a fact. But is it obvious that "the green leaf" which I see when I look out of my window is the same thing as what I believe when I judge about the leaf, viz., "that the leaf is red"? It does seem to me that whatever terminology we employ, it is important to distinguish between the object of a perception and the "internal object" of a belief; if you do not make the distinction, must you not maintain that "seeing is believing" in a sense not contemplated by the proverb maker? If you do make the distinction, the "fact" which is expressed by the "that" clause seems to be just a proposition re-baptized. Again, Dr. McTaggart has to make it a part of his case that a false belief has no object at all, does not "refer" to anything. Here I should like to ask a question which I trust will not be thought flippant. Suppose I were to publish the statement that the Prime Minister (or the Archbishop of Canterbury, or anyone else the reader pleases to select) robbed a blind beggar of three half-pence on February 22nd, 1922, I might probably be proceeded against for libel. Would it entitle me to an acquittal to argue that the statement was false, therefore referred to no one, and in consequence not to the Prime Minister (or the Archbishop), and was therefore not a libel on the plaintiff? I fancy McTaggart's rejoinder would be that though the false statement did not really refer to the plaintiff, it was mistakenly supposed by various persons to refer to him, and that, as he had suffered the injury caused by this mistaken supposition, he was entitled to reparation. But I would reply that, by his own showing, since a false belief refers to noth-

ing, the false belief of the persons who read my publication could not be a belief *about* the statements I had made. It is therefore not true that they supposed these defamatory statements to refer to the plaintiff, and again I am entitled to an acquittal. Or in the alternative, the mistaken belief of my readers *was* a belief about the statement I published, and then there is at least one false belief which does refer to an object and Dr. McTaggart's doctrine has to be given up.

There is a further serious difficulty about the argument used to show that there are no unreal or non-existent "characteristics." The question is raised whether, for example, "to be a phoenix" is not such a characteristic, since nothing which exists is a phoenix. The reply is that everything which exists is other than a phoenix, hence, to be "not a phoenix" is a characteristic of realities that exist, and "being a phoenix" is thus part of a characteristic of existents, and characteristics of existents are themselves existent. I confess that every step of this reasoning seems to me questionable. In the first place, Dr. McTaggart's views about negation strike me as open to the gravest doubt, a point which is of importance as "negative characteristics" more than once play an indispensable part in his demonstration of pluralism. I should have said that so far as I can see, "not-phoenix" is not a single characteristic at all. It is true alike of the integer 4, of the apostle on whose eve I am writing these lines and of the argument about the action for libel in the last paragraph that none of them is a phoenix. But I do not see that this entitles us to conclude that there is any character of not-being-a-phoenix which the integer, the apostle and the argument have in common. To me it seems that when it has been said that none of the three is a phoenix it still remains a wholly open question whether they have any character in common or not. Aristotle strikes me as right when he says that "not-man" is "not a name." At any rate, it should not have been light-heartedly taken for granted that he is wrong. It is still more doubtful whether "phoenix" can be said to be a *part* of the characteristic "non-phoenix." Prof. Broad's observation seems to me unanswerable, "What kind of constituent is non?" For, of course, to say that "phoenix" is one constituent of "non-phoenix" implies that *non* is the other constituent. Of course, in a sense, you may say that "not-phoenix" is derived from "phoenix," and so it is, but not by composition, by the radically different and ultimately simple process of negation. "Phoenix" can

only be said to be a constituent of "non-phoenix" if you are prepared to say that the skins which the cook pares off the apples are constituents of the apple-tart. And finally—is it even clear that the characteristics of existents are themselves existents? I do not want to dogmatize, but I have myself always felt that here would at least be no absurdity in denying that qualities and relations are existents, and I think the assumption that they are existents is far too lightly made.

To come to the next set of points on which I feel inclined to say something, the classification of existents as substances, qualities and relations. Dr. McTaggart's definition of a substance is that it is something which is not a quality nor a relation but has qualities and stands in relations. Of course, with this definition all events, even momentary events if there are any, are substances, and it also follows at once that complexes of such substances are themselves substances, though the significance of such propositions does not appear to me as great as it must do to Dr. McTaggart to judge from the stress that he lays on these conclusions. If his views about negation are unsound, of course, some modification will have to be made in the doctrine about substances. As the theory stands, the most fantastic and arbitrary combination of "substances" will be one substance, since it will always be possible to find some "negative characteristic" which can be asserted of such a combination. But if my doubts about the treatment of negation can be sustained, it may well be that if *A*, *B*, *C*, are "substances" in McTaggart's sense, there is nothing to be said about the combination (*ABC*) except it exists, that it has three members and the like, and this would not be enough to prove that (*ABC*) is a substance, since you might say as much about a combination of qualities.² In particular I should say the proposition that there is one substance (the universe) of which all others are parts seems to me undemonstrated, and it is the proposition of all others which is the most vital to a philosophy of the type of McTaggart's. But to explain my objection I must first say a word about qualities and relations. It is assumed that substances both possess qualities which are ultimate and cannot be reduced to relations and stand in relations which cannot be reduced to qualities of the related terms. On the impossibility of reducing relations to qualities the case presented is clear and, as it seems to me, unanswerable. But I own I should have liked some discussion

²Assuming of course, as McTaggart does, that qualities and relations are existents.

of the other and tempting possibility that qualities may be reducible to relations. I do not understand why Dr. McTaggart passes this alternative over with the curt remark that no one has ever entertained it. It certainly *seems* to have been the view of T. H. Green and some of his friends, who have a great deal to say about related terms and the relations between them, but never, so far as I remember, discuss quality at all. And in the old Academy Xenocrates is known to have reduced the list of "categories" to two, Substances and Relation, and the Stoic doctrine of categories shows the same tendency very strongly. I do not wholly understand McTaggart's views about quality. He seems to assume that every predicate of anything is a quality, e. g., that "to be a substance" is a quality exactly as "to be red" or "to be sweet" is. Now I am not at all clear about this. As a mere matter of history one remembers that Aristotle distinguishes very sharply between the *ousia* which is predicated of a thing *ἐν τῷ τί ἐστι* and the *ποιότητες* of the thing. It is, of course, open to anyone to hold that Aristotle was wrong in making the distinction, and Dr. McTaggart who regards "the nature" of any substance (the total of all its characteristics), as itself a characteristic, presumably holds that he was wrong. But at least on the face of it it is not obvious that "quality" is coextensive with "predicate," and I own to the suspicion that the very term "quality," so far from being simple and indefinable, covers a great deal of ambiguity which needs to be cleared up. In any case one may well feel a misgiving about regarding categorial determinations like "substantiality" and "qualitativeness" as on the same level with specific determinations under the various *σχήματα της κατηγορίας*, and I think Dr. McTaggart would have been well advised to reflect more precisely on the nature of "categories" before he made his division of the real into substances, qualities, relations.³ If "substantiality" itself and "existence" itself are not qualities, the main argument for believing that there is any such single substance as "the universe" seems to be destroyed. (Of course, as I must remind the reader, no Theist could admit that there *is* a universe in the sense in which Dr. McTaggart uses the word, since he would hold that there is nothing of which God and God's creatures can properly be said to

³ There is much food for meditation here on the treatment of categorial characters which is perhaps the most important feature of Professor Alexander's recent *Space, Time, and Deity*.

be alike constituent "parts."⁴ It will no longer be immediately obvious that "the universe" as defined is a substance in McTaggart's sense on the ground that it has qualities without being itself a quality, since it will first be necessary to establish a proposition of the type "the universe has the quality x," and this, when we have excluded "negative characteristics" and categorical determinations from quality will not be easy to prove. The question, which McTaggart's assumptions enable him to evade, whether the Scholastic doctrine that there is a "necessary being" and that nothing can be univocally predicated of the necessary being and any other will have to be seriously faced. I think the reality and gravity of the issue is concealed from McTaggart by the use he makes of the notion of the "content" of a "group." (§ 125.) A "group" is defined as a collection of substances or of collections of substances; the "content" of the group is "that plurality which is identical in the different sets of parts of a group," a "set of parts" being "any collection of parts which together make up the whole and do not more than make it up." On the assumption that all substances are infinitely divisible, it will of course be the case that there are an infinite number of "sets of parts" of every substance, and thus that every substance has "content." That a simple substance should exist is, in fact, held to be excluded by the consideration that such a substance would have no "content," and thus would be nothing in particular. This reasoning does not impress me as valid. Of course, when "content" has been defined in terms of a "set of parts," with the arbitrary proviso, carefully inserted by McTaggart, that such a set is always to consist of at least two (i. e., the parts are to be "proper" parts), it is obvious that a simple substance, if there can be such a thing, can have no "content."⁵ But I do not see why there might not be such "contentless" substances (i. e., particulars). A "simple substance," having no set of parts, would have no content, but this

⁴ I make this observation not to prejudice the issue but merely by way of calling attention to its importance.

⁵ The notion of a "group" presents certain difficulties. It is distinguished from that of a "class" by the facts that McTaggart takes an "intensional" view of classes, and that he requires a group to have more than one member. But, as it seems quite indispensable to exact logic to adopt the extensional view of classes, the group seems to be nothing more nor less than what is ordinarily called a class, with the restriction that unit-classes and the null-class are to be excluded from consideration. I do not believe that the radical distinction the author insists on between "class" and "group" could really be carried through. A "class of two" and what McTaggart calls a group with two members seem to me identical, though it is important for his further argument that they should not be so.

does not prove that it might not have perfectly definite characteristics, and all that is necessary to ensure that it shall not be nothing is that it shall have characteristics. Again, the empirical evidence for the divisibility of substances does not seem to take us far, and the argument by which the advance is made to the infinite divisibility of all substances seems to me plainly fallacious. If I have rightly apprehended this argument it turns simply on the allegation that time can be divided into moments. It is then argued that, with McTaggart's definition of substance, "the substance x at the moment t_1 ", is a substance which is also a part of another, viz., of "the substance x in the interval t_0-t_n " if t_1 is a moment of that interval. Even if, as we are told, we shall ultimately come to recognize, time is unreal, the infinite divisibility of time into moments will have some corresponding real infinite divisibility behind it of which it is the appearance.

Now, in this reasoning one may reasonably take exception to the conception of indivisible and unextended moments as constituent parts of an interval. Since the appeal is being made to perception, it may fairly be said that the durations we perceive are never inextended, and that they always overlap. "The substance x during the interval t_0 to t_n " is certainly not perceived as having parts which are unextended and not overlapping. When we "pass to the limit" and conceive of a duration as a continuum of strictly momentary and non-overlapping elements, these elements are not really "parts" of the duration in the sense which McTaggart's argument requires. They are not homogeneous with the duration, and, therefore, so far as I can see, you cannot argue that "the substance x at one of these moments" is itself a substance, any more than you could argue that the moment is itself an interval. The conclusion really indicated is that the substance, like the interval, is a continuum, and continua are notoriously not homogeneous with their elements. A second difficulty is that it is far too easily assumed that the argument, if valid at all, would not be upset by the discovery that time is unreal. If time is unreal, I do not see how you can safely assume that its analysis into a continuum of moments must correspond to some similar analysis of the reality of which it is an "appearance." (One might illustrate the point by considering, e., g. the relation between the continuum of the real numbers and the series of the rational numbers. The real numbers are connected with and can be derived from the rational numbers in virtue of a perfectly definite

relation; yet the properties of the two series are very different; the "rationals" can be "well-ordered" as a "series of type ω ," the real numbers notoriously cannot (or at least no attempt to order them in this way has ever succeeded). So, too, from the mere consideration that the "appearance" time can be analyzed into a continuum of moments, it seems rash to infer that the "real" characteristic of substances which we apprehend in an illusory way, if time is unreal, as their duration need be similarly divisible.

I find some further difficulties in the application of this general line of argument to the self, which is, of course, recognized as a substance whose parts, themselves also substances, are the "states" of the self at different moments. Dr. McTaggart assumes that we do "perceive" both our "states" and our "self," and that the second as perceived is a whole of which the former are "parts." I do not want here to discuss the truth of this view of the self as a whole made up of our "states," but I should like to remark that it is by no means manifestly and obviously true. Dr. McTaggart's psychology seems to me to have the usual defects of an extreme presentationalism. He clearly takes it for granted that we are originally acquainted with the self and also with its states, as we are with colors, sounds and the like; but in all these cases we are dealing with objects placed before the mind for its inspection. Many, if not all philosophies, would deny this, and, especially in view of Professor Alexander's insistence on the radical distinction between "contemplation" and "enjoyment," I think the questions whether our awareness of our "states" is really of the same kind as our awareness of "sense-data," and again whether we are directly aware of the self as a whole at all ought to have been subjected to a thorough examination. The presentationalist account has, at any rate, no claim to be accepted without discussion as though it were acknowledged and undisputed truth.

If Dr. McTaggart has not made out his case for the infinite divisibility of all substances, and for the ascription of certain characteristics to a "whole" composed of all substances, it must, then, remain an undecided question whether a universe (in his sense of the word) is a single "substance" at all. I cannot undertake here to discuss the point further, since to do so would require a detailed examination of the use made of the doctrine of negative characteristics and the worth of the attempted proof that the original qualities and relations of substances give rise to endless further series of

qualities and relations. I have grave doubts about this part of the author's deductions but my space will not permit of a consideration of it. I hasten to make some comments on the very important doctrine about "extrinsic determination" and "sufficient description."

Dr. McTaggart distinguishes between two kinds of determination which may hold between the characteristics of substances, intrinsic and extrinsic. Intrinsic determination, as defined, is clearly a relation between facts answering to what is called in modern language the "formal" implication of one "propositional function" by another, though the actual definition given of it (§ 107) seems to show that Dr. McTaggart has not realized the importance of the difference between formal implication, which is a relation between propositional *functions*, and so always between universals, and material implication, which is a relation between propositions and may hold between universals, between particulars or between particular and universal. (His explanations show that he means to speak of formal implication, but the actual definition given of implication on p. 110 is that of material implication.)⁶ Extrinsic determination is simply the relation which exists between any two qualities X and Y of a substance W , in virtue of the fact that both are qualities of W . This relation, I confess, seems to me of no special significance, since it only enables us to assert that there is a material implication between " W is an X " and " W is a Y ." (Indeed, the relation does not exactly correspond even to this material implication, since it is supposed to exist only when both these propositions are true, whereas the material implication $a \supset b$ holds for all cases except that in which a is false and b true.) Hence, "extrinsic determination," unlike material implication, is always reciprocal.

Dr. McTaggart draws certain very far-reaching conclusions from the existence of reciprocal extrinsic determination between the characteristics of a substance. In ch. 12, it is argued that this reciprocal determination forbids us to suppose that we can know anything whatever about the consequences of the supposition that any characteristic of any substance were other than it is. E. g., it is impossible to say, "if Snowdon were a foot lower than it is, it would still be a mountain," or "if I had heated a poker yesterday it would be

⁶ The point is that a "formal" implication is always universal. It is of the form $\Phi(x) \supset \Psi(x)$, i. e., it always includes a "variable." The meaning is that if you substitute for x in this expression on both sides any one (say a) of the range of values of which x is capable, you will get the material implication between the propositions, $\Phi(a) \supset \Psi(a)$. Until the x of the formal implication is replaced by an individual value of the "variable" you have no propositions at all.

cold today." For, since every substance has a "nature" which is the complex of all its characteristics, Snowdon with one characteristic different would be a different substance from the actual Snowdon, and, in virtue of "extrinsic determination," *all* its characteristics would be different. In ch. 19 this argument is extended to the universe on the ground that the universe is a single substance, and so we reach the result that, thanks to the principle of extrinsic determination, we have no right to say that any one fact in the universe could be what it is if any other part were other than it is. Dr. McTaggart makes it clear that he regards this as a refutation of libertarianism in ethics and a justification of the doctrine of a "block universe." To me it seems that the only consequences which can be drawn from the principle are utterly trivial. Consider the case of a substance which has the characteristics *W*, *X*, *Y*. What difference does the principle permit us to hold would be made to *W* or *X* if the third characteristic had been *Z* instead of *Y*? Merely that *X* (and similarly *W*) would then have co-existed with *Z* and not with *Y*. (I am not saying that this would be all the difference that would actually be found, but that it is all that "extrinsic determination" warrants us in asserting.) E. g., if Snowdon were *x*-10 feet high instead of being, as it actually is, *x* feet high, then we can be sure that its other characteristics, whatever they might be, would not belong to a mountain with the characteristic of being *x* feet high. The observation is true enough, but, as I should have said, merely "trifling." It is further true, and it is important to remember this, that it is always very rash, in view of our ignorance about interconnections, to be confident that a very small difference introduced into the state of things may not have far-reaching consequences. It is often rash to assume that if a certain substance has not the quality *W*, it would still have the quality *Y*. But I do not see that "extrinsic determination" has anything to do with the uncertainty of such conclusions. And I should have thought that, though it may be true that apart from empirical knowledge we cannot be sure how far-reaching the effects of any difference in the characteristics of a substance may be, empirical considerations frequently enable us to make quite definite inferences of the form "even if *x* had had the quality *X*₁ instead of *X*, it would still have had the quality *Y*." Dr. McTaggart himself has, of course, to provide a justification for the practical assumptions of this kind which we all have to make with a view to the future, such as, e. g., "if I do not

wear my overcoat today I shall catch cold," and thus, I think, draws the string of his own argument. To be quite frank, I do not see that this principle has any bearing at all on the ethical issues about freedom, since it amounts to no more than the harmless tautology that "if things were different, they would not be the same,"⁷ and I am a little surprised by the superficiality of the statements which profess to describe what believers in free choice mean. I should like to caution Dr. McTaggart's readers that the use he makes of his doctrine in his second volume will need to be very carefully watched. I am much afraid, from the tone of his remarks about freedom, that he may be confounding the two very different statements, "we cannot be sure that one detail in the universe could be different without making some difference to all the rest" (a proposition which is true but trivial), and "we can be sure that if any detail were different all the rest would be different" (a proposition which, if true, would be of immense importance, but which we have every reason to think false).

I come now to "sufficient description." This is highly important in connection with substances. A substance, being always in McTaggart's use of the name, a particular, cannot be defined, but only described. A description of a substance is exclusive when it is applicable only to that one substance and to no other. Such an exclusive description might be given entirely by mentioning characteristics of the substance described, or by introducing into the description some reference to a second substance which is not itself described, as e. g., if I spoke of Henry VII as "the father of Henry VIII." A *sufficient description* is an exclusive description of the former kind, one which is entirely in terms of characteristics and does not mention any undescribed substances. From the consideration that by McTaggart's definition of substance all substances are particular it readily follows that there must be a sufficient description of every substance, though the description is usually unknown to us; we have commonly to identify a given substance by introducing into our insufficient descriptions of it a direct appeal to immediate perception. Here I feel a difficulty about the consistency

⁷ If William Shakespeare had been christened John and not William, it is certain that his works would not have been the works of a man with the Christian name of William. I do not see how this gives us any reason to suppose that if there had been a "substance" only differing in this respect from William Shakespeare that substance would not have written *Hamlet*. In this particular case our empirical knowledge of mankind, I should say, justifies a fairly confident inference that William Shakespeare's dramatic work would not have been affected if his parents had preferred to call him John.

of the inevitable demand that every substance shall have a sufficient description with some of McTaggart's other positions. The sufficient description is to be given wholly by means of characteristics, i. e., qualities and relations, of the substance described, and is not to introduce any undescribed substance. (There is, of course, no objection to the introduction of a substance which is itself independently provided with a sufficient description.) It must also be borne in mind that McTaggart holds that if two substances *A* and *B* stand in the relation *R*, they have in virtue of this relation a derived relational quality, that of being respectively antecedent and consequent of the relation *R*. Of course, any of the endless series of derivative qualities and relations may figure among the characteristics which make up the sufficient description of a substance.

Now what kind of formula would such a sufficient description be? It is clear that the characteristics included would not all be original qualities (qualities not derivative from relations) except on one condition. For we cannot in general deny that there might be (in different regions of space or at different times) two substances whose original qualities were precisely the same. The only substance which could be *sufficiently* described solely in terms of its original qualities would be *one*, if there is one, in whose quality itself uniqueness was implied. In the case of any other substance, a sufficient description would have to include relations to other substances or qualities derived from such relations, and it would be necessary that there should be independent sufficient descriptions of these substances. If they are in turn to be described in the same fashion, there are only two alternatives. Either the process never comes to an end, and we get the very contradiction McTaggart finds himself threatened with by the doctrine of the infinite divisibility of substance, that every substance must have, and yet no substance can have, a sufficient description, or there must be some substance which can be sufficiently described in terms of nothing but its own original qualities. Then, if we could describe a second substance without introducing any reference to any other substance but the first, i. e., if we could indicate a unique relation in which the second substance stands to the first, we should be fairly started on the way to get sufficient descriptions of substances. But the special and peculiar character of the initial substance as one whose original qualities determine its absolute uniqueness seems indispensable as a starting point for the whole process. In other words, as it seems to me, there can be sufficient descriptions of substances only

on the supposition that the *ens realissimum* exists and that the line of thought of the "entological proof" is valid.⁸ McTaggart's ontological scheme has, of course, no place for anything like the *ens realissimum* even in the form in which the "universe" itself as a whole is identified with that *ens realissimum*. The introduction of a "most real" or "necessary" being of any kind whatever would lead at once to the admission of a relation of one-sided dependence between the "necessary" being and all other "substances"; they would be determined by it, whereas it would not be determined by them. This would conflict with the reciprocity of determination which is one of the most characteristic features of McTaggart's universe. Even if the "necessary being" were taken to be simply the system of "substance" as a whole, the whole would have to be thought of as determining its parts in some way in which the parts do not determine the whole, and this would be flat counter to the pluralistic prepossession which leads McTaggart to insist that the plurality in the universe is more fundamental and important than the unity—as, indeed, his known view that the world is a great society of persons without any head requires him to hold.

It is by a more roundabout way, and through consideration of the very doubtful doctrine that every substance is divisible into parts *ad infinitum* that McTaggart himself is led to face this apparent contradiction that every substance must have and no substance can have a sufficient description. I am not convinced that the argument by which the difficulty is connected with this particular theory of the infinite divisibility of substance will really stand examination. To my own mind, the problem arises directly as soon as one admits, as Dr. McTaggart, rightly in my opinion, admits, that there must be a sufficient description of every substance. If Prof. Broad were right in contending that there is no reason why every substance should have such a description, of course the antinomy developed by McTaggart would become illusory. If we assume with

⁸ To ensure that the description shall be applicable only to this one "substance," it seems to me, we need therefore to specify that the quality or qualities mentioned in the description must themselves be such as can only belong to one substance. Otherwise we should have no guarantee that the combination of them may not be repeated. This leaves it possible that the substance under consideration should also have some original qualities which are not unique, but it would be superfluous to mention them in the description. As far as the attributes which make up the sufficient description go, it would be true to say of them what the Scholastics say of the attributes of God, that none of them can be predicated univocally of the substance in question and of anything else. And to mention any of these attributes would provide a sufficient description, so that we are at least coming very near the Scholastic doctrine that every "attribute of God is God."

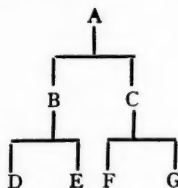
McTaggart that the difficulty is a real one and that it arises specially from the infinite divisibility of substances, then, it is argued, that the only way out of the contradiction is that if *A* be a substance, there must be *some* sufficient description of *A* such that it *implies* (formal implication is meant, of course), an endless series of sufficient descriptions of the parts of *A*. The relation between a substance and a set of its parts which guarantees this is what McTaggart calls *Determining Correspondence*. The relation is by no means one which it is quite easy to grasp, especially as the author confesses himself unable to provide any really satisfactory example of it. It is supposed to be subject to six postulates, but of these six, one, as Prof. Broad has pointed out, is mistaken, as McTaggart's own statements show, and another seems to me expressed in a way which at least leaves its meaning highly ambiguous. The statement, as given on pages 209-210, amounts to this:

- (1) Any substance *A* has a "set of parts," i. e., a collection of parts which together make up *A*, without defect or redundancy. (The set may be either finite or infinite in number. In what follows we suppose, for the sake of illustration that the "set of parts" of *A* are *B* and *C*.)
- (2) Each part of *A* has itself a set of parts corresponding to each set of parts of *A*.
- (3) The correspondence may be "of the same sort" throughout.
- (4) It is to be a "one-to-one" relation between the members of the sets of parts.
- (5) It is to be such that a certain sufficient description of *C* which includes the fact that it is in this relation to some part of *B* will determine a sufficient description of the part of *B* in question.
- (6) It is finally to be such that when one determinant is part of another determinant, any part determined by the first will be part of a part determined by the second.

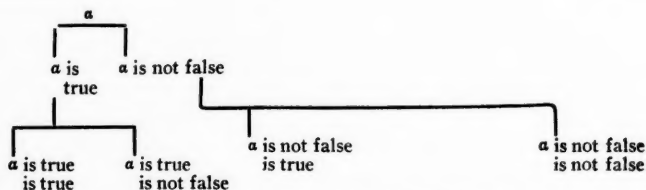
If all the six conditions are satisfied, the result is that sufficient description of the primary parts of *A* (viz., *B* and *C*) will determine an infinite succession of parts of parts of *A*. The relation of determining correspondence as defined by the six postulates is plainly a very complex affair, and it is not easy to feel satisfied either that the postulates are all consistent or that any known relation verifies them all. As to the first point, Prof. Broad has already pointed out that (4) is, in fact inconsistent with the other postulates, since the relation between members of sets of parts determined by them is not "one-to-one." I should add that it is wholly obscure to me how much or little is meant to be covered by the postulate (3) that the correspondence is to be "of the same sort" throughout. Since

McTaggart clearly attaches considerable importance to this stipulation, its precise meaning ought to be made absolutely plain.⁹ Again, perhaps from sheer stupidity, I feel some difficulty about the very important condition (5). There is to be a sufficient description of *C* which includes as part of itself the statement that *C* stands in the relation defined to a certain part of *B*, and this statement is to determine a sufficient description of the part of *B* in question. Is this really consistent with the definition of a sufficient description? Such a description was to be wholly in terms of characteristics of the substance described, and was not to introduce a reference to an undescribed (i. e., I suppose, not sufficiently described) substance. The sufficient description of *C* which mentions its peculiar relation to a certain part of *B* will only satisfy this demand if there is an independent sufficient description of the part of *B*, and yet it

⁹ Until a strict definition is provided, I feel much as I should if I were trying to understand a mathematical work which laid great stress on the "uniform conveyance" of certain functions without explaining what "uniform" conveyance means. It seems clear to me that Dr. McTaggart has not fully thought out his own doctrine. He denies, for example, that you can establish a correspondence between a series of infinite parts of parts and a series of propositions of the type *x* is true, "*x* is true is true," and so on, on the ground that in the second case you do not get, as you do in the first, an increase in the number of members at each successive step. But plainly this is a mistake, as may be shown by McTaggart's own illustration. Take the example of an unending dichotomy.



You can get a parallel to this in a series of propositions starting with a given proposition *a* as follows:



Whatever objection may be taken to recognizing the series of implications as corresponding to the series of divisions, the particular objection urged by McTaggart is mistaken.

is precisely by means of the sufficient description of *C* that the existence of a sufficient description of the part of *B* in question is to be guaranteed. Very possibly I am mistaken, but I cannot help wondering whether the process is not at bottom circular.¹⁰ I do not feel at all sure that McTaggart himself has not been confused by the complexity of his own definition, especially as, when it reappears on p. 238, its whole character has been changed by the twice repeated writing of *B* for *C*. This may be a mere typographical error, but that it should have gone undetected suggests that the author was not quite clear about his own meaning. (This, by the way, is almost the only error of the kind I have detected in the book, except that something has gone wrong in the last sentence of p. 253. The substitution of "less" for "more" in this sentence is needed to give what is manifestly the sense intended.)

There is also the very real difficulty that even if it could be shown that all the six postulates are consistent with themselves and with the rest of McTaggart's presuppositions, it must remain doubtful whether the world as known to us presents us with any relation which satisfies them all. McTaggart himself only suggests one possible example of a relation which might turn out to answer all the demands of his postulates, the relation of percipient to perception, and, as he is careful to point out, this relation itself only satisfies the required conditions on the suppositions that every percipient perceives exclusively other percipients and their parts, and that all the parts of a percipient are perceptions. Of such perception as this, he truly says, we have no experience. Unless, therefore, it can be shown in the second part of the work that there is some other relation between persons than perception which does satisfy

¹⁰ Professor Broad has objected to me on this point that all that is really assumed is that there is an independent sufficient description of *B*; it is not assumed that there need be an independent sufficient description of *that part of B which is determined by its relation to C*. I. e., I have misunderstood the expression "a certain part of *B*," which should be taken to mean "a part of *B* not already determined," "some part or other of *B*." This seems to me to be the correct interpretation of McTaggart's ambiguous language. But I am not sure that it really removes my difficulty. For the "sufficient description of *C*" will, on this view, include the statement that it has a relation *R* to an unspecified part of *B*. This part of *B* being a part of a substance, is itself a substance, and hence the sufficient description of *C* includes a reference to a substance (the part of *B* in question) not yet described, and—this is contrary to the definition of sufficient description. Suppose, e. g., that I am *B*, a certain barber is *C*, and the relation *R* is that he once cut my right ear. Then my right ear is a substance mentioned in the sufficient description of *C* and yet it is supposed not to be otherwise sufficiently described than by the statement that it is the part wounded by *C*. The mere fact that there is an independent sufficient description of me does not seem to meet the difficulty.

the conditions, it must in the end be doubtful whether there really is any such relation as determining correspondence.

The foregoing remarks have been very inadequate and there are many valuable chapters of Dr. McTaggart's book over which I have to pass in silence (e. g., the careful discussion of the position of "laws" in the universe, and the admirable examination of the claims of inductive generalization to establish such laws). It has been inevitable that in most of what I have said I should dwell chiefly on points where I feel doubts as to the author's reasoning or conclusions or even feel pretty sure that they are defective. I trust no one will be hasty enough to suppose that this shows any want of appreciation of Dr. McTaggart's acumen or ingratitude for what he has given us. The worth of a dialectical work is to be measured not by the amount of agreement one feels with its results, but by the extent to which it compels one to think and think again about the very foundations of one's reasoned convictions. Personally, I have not for a long time found more than one or two works so provocative of thought in myself as this first installment of *The Nature of Existence*.

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BOOK REVIEWS

FICHTE ET SON TEMPS: 1. ÉTABLISSEMENT ET PRÉDICATION DE LA DOCTRINE DE LA LIBERTÉ. LA VIE DE FICHTE JUSQU'AU DÉPART D'JENA (1762-1799). By *Xavier Léon*. Paris: Librairie Armand Colin, 1922. Pp. XVI, 652. 30 fr.

In this work M. Léon's purpose is to show that throughout his life Fichte was the devout disciple and eager apostle in Germany of the ideal of liberty proclaimed by the French Revolution. In support of this thesis he narrates in detail in this first volume the facts of Fichte's life from his birth in 1762 to his departure from Jena in 1799; his youth, the influence upon him of Spinoza, Lessing, Kant and the French Revolution, his appointment as Professor of Philosophy at Jena on the departure of Reinhold, the period of fame during which his ideas carried everything before them, followed by his struggles against the opponents of the new ideas, which culminated abruptly in his enforced departure from Jena as the result of the accusation brought against him of corrupting the young and blaspheming the Gods, ostensibly an accusation of atheism but really one of Jacobinism.

M. Léon claims that these events and Fichte's relations to the work of his immediate predecessors and of his contemporaries exercised a profound influence on his life and philosophy. They were the circumstances which occasioned his writings and his actions, the various stimuli so to say which determined the progress of his philosophical reflection and the direction of his doctrine. His writings are therefore essentially practical and polemical. In all of them, and especially in the *Wissenschaftslehre*, the main product of his literary activity during this period, Fichte appears as the missionary in Germany of the ideal of the French Revolution. Now Fichte was a philosopher who lived his philosophy to the full; for him, therefore, life's struggle had only one aim, the triumph of the new gospel of liberty, reason and progress over the evils of despotism, obscurantism and tradition. Not for a moment did he change either his attitude towards life or his system in philosophy; from the beginning of his career to the end he remained faithful to those principles and to himself.

In the light of this conception, Fichte's life and activities during this period are subjected by M. Léon to a close and careful study, and his writings are minutely analyzed and frequently quoted at length. Much of the material that is reviewed is old, but many additions have been made from documents hitherto unpublished. For example, new light is shed upon Fichte's negotiations with the students' associations at Jena and with the Weimar government through Voigt, showing in the clearest possible manner not only the powerful nature of Fichte's influence over the students, but also that all his dealings with them were those of a gentleman with gentlemen. Fichte's debt to Spinoza, to Rousseau, to Kant and to Reinhold is skilfully analyzed, the events leading to the *imprimatur* of the *Kritik aller Offenbarung* are set in the clearest light, the relationship of the *Wissenschaftslehre* to Reinhold's doctrine is precisely defined and the *Wissenschaftslehre* itself is admirably expounded.

But it is impossible to refer here to all the many excellent features of this book. It is noteworthy especially for its wealth of material and for its lucidity of exposition. It is a book which is indispensable to the student of the philosophy and history of the time, and one which will interest the general reader who desires to know more of one of the foremost figures of a period which marks an epoch in the intellectual and political evolution of Germany, of a champion of that principle of nationality which so profoundly influenced the course of political development in Europe during the nineteenth century, and of the ardent patriot who inspired the people of Germany with the spirit of nationality and roused them to a sense of unity.

In regard to that period of Fichte's life with which this volume is concerned M. Léon seems to have established the thesis which he set out to prove, that the guiding principle of Fichte's life was persistent adherence to the ideals of the French Revolution. It will be interesting to see whether he succeeds equally well with the much more difficult task of proving this thesis for the succeeding periods of Fichte's life. We await therefore with much expectation the two remaining volumes of this work, the second of which, to appear probably in 1923, will deal with the period of struggle against the spirit of reaction (1800-1805), while the third, due in 1924, will narrate the struggle for national freedom from 1805 to Fichte's death in 1814.

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